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Research Product 87-01

**The De Anza Primer:
A Basic Introduction to the
De Anza Graphics Display**

**ARI Field Unit at Presidio of Monterey, California
Training Research Laboratory**

January 1987

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U. S. Army Research Institute for the Behavioral and Social Sciences

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The BDM Corporation

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) / The De Anza Primer provides personnel newly assigned to the Training Analy- sis and Feedback (TAF) Section of the NTC Operations Group with a training tool for learning the routine skills needed to operate the De Anza Graphics Display. The instruction is organized in a step-by-step manner that begins with the most rudimentary station operations and progresses through the manipulation and control of all functions necessary for routine operation of the De Anza Graphics Display Tablet. Instruction is presented in a series of hands-on (Continued)		

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exercises that demonstrate various graphics display functions used by Core Instrumentation Subsystem (CIS) personnel to electronically monitor the battalion task force during the rotation.

The manual is divided into six sections: (1) Preventive Maintenance/Minor Troubleshooting; (2) Map Control; (3) Unit/Player Display Formats; (4) Control Measures; (5) Map and Button Bins; and (6) Historian and AAR Mode Controls. Each section contains one or more sets of hands-on exercises designed to be completed with minimum supervision regardless of the skill level of the learner. All exercise sets can be completed in 4-1/2 hours.

In addition to the Table of Contents, which lists all exercises and function buttons described in the text, an alphabetical Index that lists each De Anza function addressed in the manual and references the page(s) of instruction is also included.

Research Product 87-01

**The De Anza Primer:
A Basic Introduction to the
De Anza Graphics Display**

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January 1987

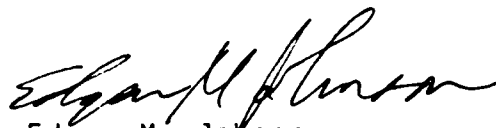
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Education and Training

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FOREWORD

This training manual was prepared in response to a request from the Operations Group at the National Training Center, Ft. Irwin, CA. It is the first in a series of training products to be prepared for the NTC by The BDM Corporation under contract to the Army Research Institute. These research products reflect ARI's continuing support of the Combined Arms Training Activity and the National Training Center.



Edgar M. Johnson
Technical Director

BLUEFOR

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A									
B									
C									
D									

the DeAnza primer

A Basic Introduction to the DeAnza Graphics Display

OFF	PLAYER	UNIT SYMBOL	AREA OCCUPIED
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	TOC	SCT	AT	4.2	TRNS CBT	TRNS FLD	MAN-PAD
BN ETS							

	TOC	ARTY	ENGR	TRANS	CHEM	ARM CAV	ABN INF	ARMY AVN	AIR CAV
DIV/BDE ETS									

	COMM	TNSP	MED	EW	S&S	AIR DEF

THE DE ANZA PRIMER:

A Basic Introduction to the DeAnza Graphics Display

This manual has been developed for the NTC Operations Group, Ft. Irwin, California by The BDM Corporation and the Monterey Field Unit of the Army Research Institute (ARI/POM).

February 1986

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INTRODUCTION

The purpose of this manual is to provide newly assigned Training Analysis and Feedback (TAF) Center personnel with a training tool for learning the routine skills needed to operate the DeAnza Graphics Display.

The DeAnza Graphics Display is only one component of the three different systems that make up the NTC Work Station. The NTC Work Station, depicted in Figure I-A, consists of the following components:

- o VT105 Monitor and Keyboard (1)
- o DeAnza Graphics Display
 - Graphics Tablet (2)
 - DeAnza Display Monitor (4)
- o Communications Network (3)
- o 19" Color Monitor/Receiver (5)

This manual addresses the operation of the DeAnza Graphics Display. It does not provide the instruction for the other components of the NTC Work Station. It does not address specific job requirements within the TAF organization.

The TAF Exercise Director will provide the specific guidance necessary for the operation of your particular station and position.

The DeAnza graphics display enables you to monitor training events and store significant information about the events as they are actually taking place in the NTC training corridors. De Anza displays are the same at all stations in the TAF complex and once you have learned how to operate one DeAnza display, you will be able to operate any DeAnza display in the complex. The DeAnza graphics monitor displays training events in near real time -- events are transmitted from the field and received and displayed by the computer as they are actually taking place. This allows station operators to monitor each mission and record significant information and events. Stored information is then used for the preparation of After Action Reviews (AARs), the production of take-home training packages, and the support of Training and Combat Developments research at the NTC.

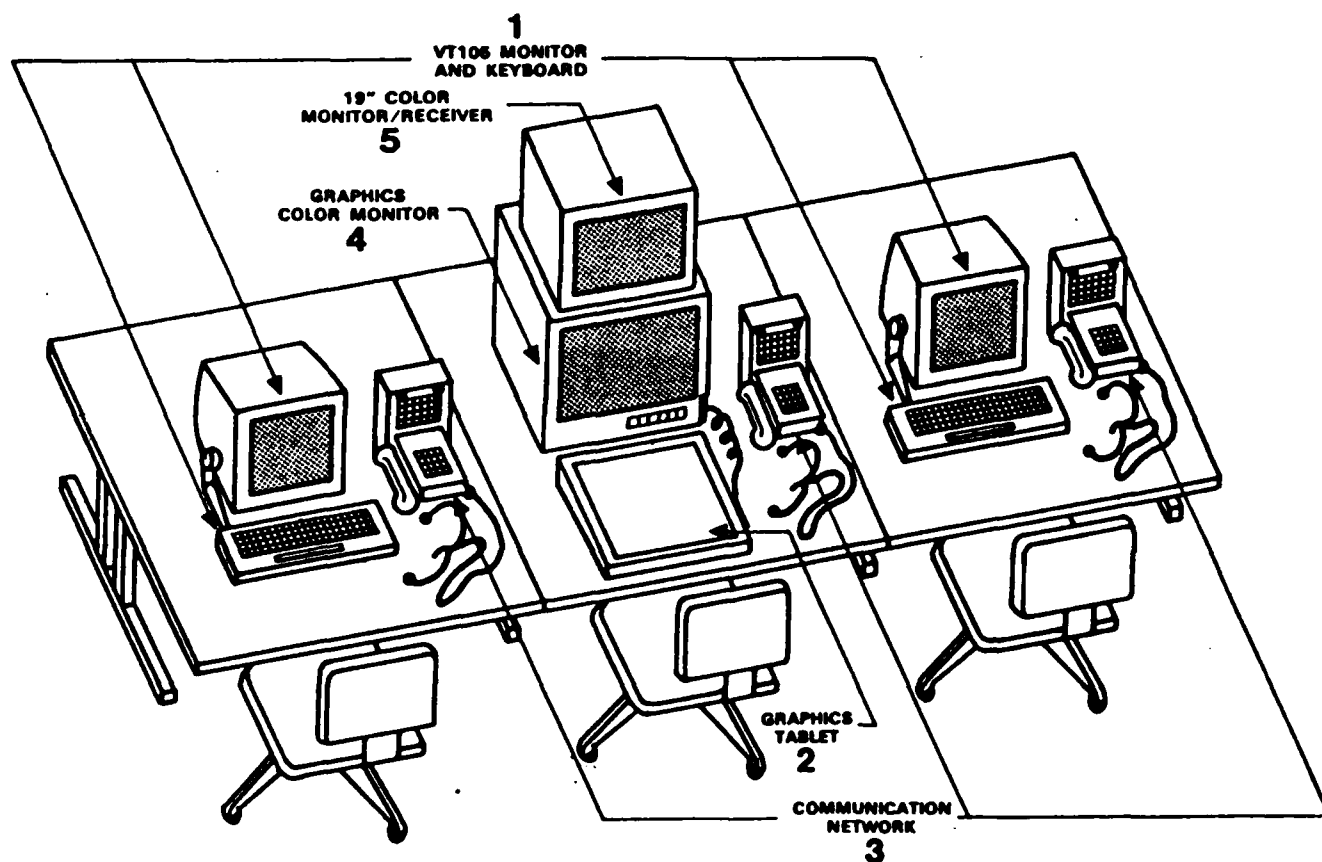


Figure I-A. NTC Work Station.

The instruction which follows is organized in a step-by-step manner that begins with the most rudimentary station operations, such as turning the station on and off, and progresses through the manipulation and control of all functions necessary for operation of the DeAnza graphics display. The instruction is presented as a series of short exercises which demonstrate the various functions you will need to know in order to control certain features of the display.

Each section of the manual covers a different set of related functions. Sections are organized so that skills are learned sequentially. The skills developed in Section 1 are required to learn the skills taught in Section 2.

When learning to use the DeAnza display for the first time, you should proceed through the manual sequentially: Section 1, 2, 3, 4, 5, and 6.

A list of the learning points for each set of exercises can be found at the beginning of each of the six sections in the manual. It takes approximately 4 1/2 hours to complete all the exercises and it is recommended that all six sections be completed in one sitting. However, if you do not have a four and one half hour block of time available, Sections 1 and 2 may be completed in 1 hour and 30 minutes (Section 1 is introductory and should be completed together with Section 2) and Sections 3 and 4 require approximately 1 hour each, and Sections 5 and 6 require 30 minutes each.

If you already have some experience with the DeAnza and are refreshing your skills, you can use the Table of Contents or the Index at the back of the manual to select the particular instruction you require. The Table of Contents lists the exercises that demonstrate each DeAnza function. The Index alphabetically lists each button on the graphics tablet that is addressed in this manual and references the page(s) of instruction for that button.

SECTION 1: PREVENTIVE MAINTENANCE/MINOR TROUBLESHOOTING

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SECTION 1: PREVENTIVE MAINTENANCE / MINOR TROUBLESHOOTING

Exercise 1.1: Preventive Maintenance (PM)

The DeAnza graphics display is made up of three basic components (Figure 1.1-A): the graphics display monitor (1), the graphics tablet (2), and the graphics tablet pen (3).

There are several basic PM procedures that you must perform in order to keep your station's equipment operating properly. Operator PM requires you to clean the display screen and inspect the graphics tablet pen. The display (1) is cleaned by lightly spraying with a cleaner such as Windex and wiping dry with a soft cloth or paper towel. The graphics tablet pen (3) should be inspected for loose wiring. Any problems should be reported to the exercise director.

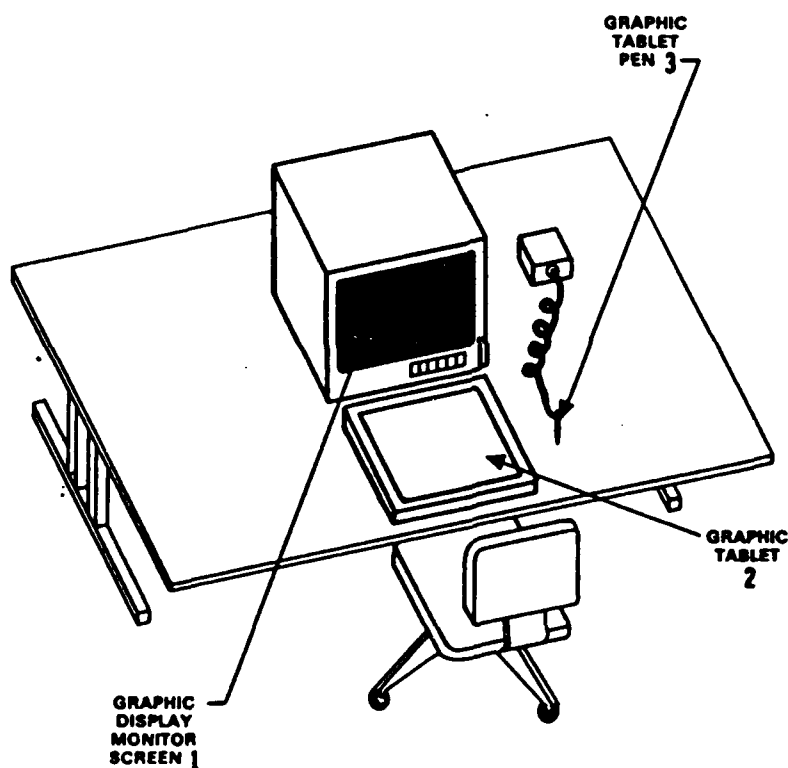


Figure 1.1-A. De Anza Graphics Display.

DO NOT TOUCH THE METAL TIP OF THE PEN OR PLACE IT NEAR YOUR CLOTHING AS IT BECOMES HOT DURING OPERATION.

SECTION 1: PREVENTIVE MAINTENANCE / MINOR TROUBLESHOOTING

Exercise 1.2: Minor Troubleshooting

The contracting staff who operate the computer system are responsible for all equipment turn on and shut down procedures as well as the troubleshooting of system hardware and software. However, there are some minor troubleshooting procedures that can be performed by station operators. The following discussion identifies the Off/On switches and associated indicator lights which should be checked by the station operator when the equipment does not appear to be operational.

If your station does not appear to be turned on, check the following:

1. Check to be sure that the **POWER SWITCH** at the rear of the graphics monitor is "On" (Figure 1.2-A (1)). Check to see that the **HEALTH LAMP** (Figure 1.2-A (2)) is illuminated. Adjust the **BRIGHTNESS** control (Figure 1.2-A (3)) for the proper intensity of the display screen.
2. If the **POWER SWITCH** is "On," the **HEALTH LAMP** is illuminated, you have adjusted the **BRIGHTNESS** control and the screen remains blank, stop and call for maintenance assistance.

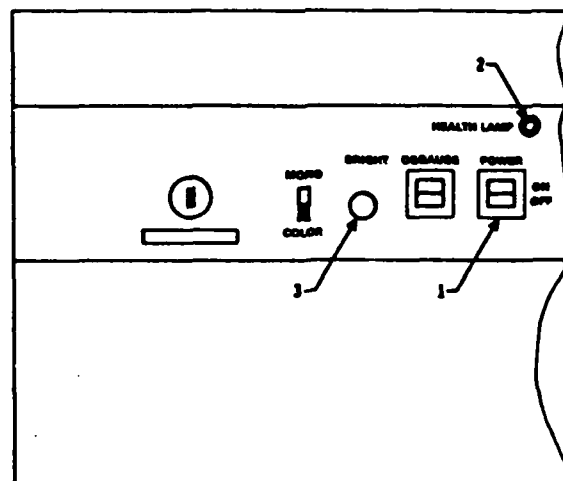


Figure 1.2-A. DeAnza Display Monitor Control Panel.

SECTION 1: PREVENTIVE MAINTENANCE / MINOR TROUBLESHOOTING

Exercise 1.2: Minor Troubleshooting - Continued

VT105 Display Monitor (Figure 1.2-B)

Check to see that the **POWER SELECTOR SWITCH** (1) at the rear of the monitor is at the 115v position and that the **POWER SWITCH** (2) to the "On" (up) position.

VT105 Keyboard (Figure 1.2-B)

Either the **ON LINE** (3) or the **LOCAL** (4) lamp should be illuminated. If any of the other keyboard indicators are illuminated stop and call for maintenance assistance. If the **ON LINE** or **LOCAL** lamp is illuminated and the screen is blank, adjust the display intensity by pressing the **SET-UP** key (5), pressing the up and down arrow keys (6) to set proper intensity, and finally repressing the **SET-UP** key.

If the screen remains blank, stop and call for maintenance assistance.

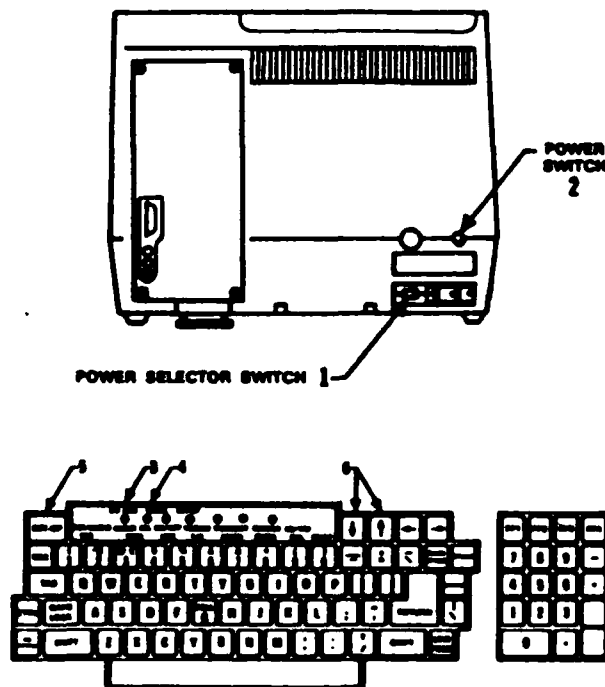


Figure 1.2-B. VT105 Display Monitor (Rear View) and Keyboard.

SECTION 1: PREVENTIVE MAINTENANCE / MINOR TROUBLESHOOTING

Exercise 1.2: Minor Troubleshooting - Continued

Dual Channel Monitor (Figure 1.2-C)

Check to see that the **POWER SWITCH** (1) is "On" (up) and that the switch is illuminated.

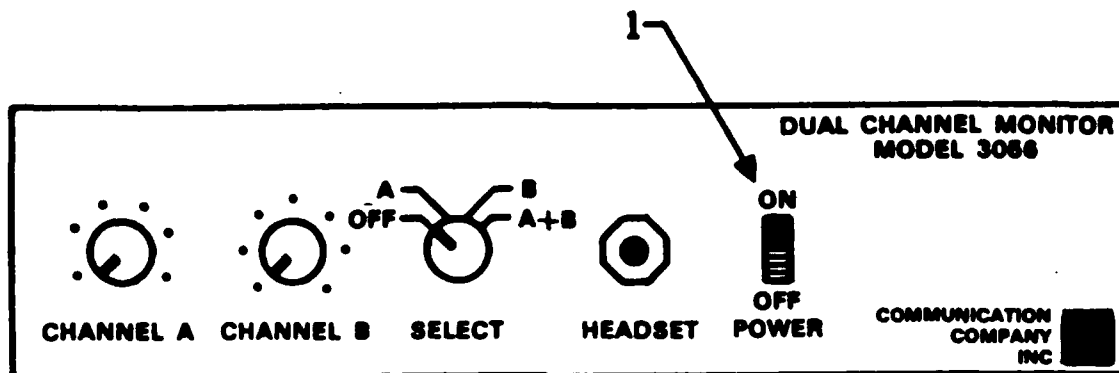


Figure 1.2-C. Dual Channel Monitor.

SECTION 1: PREVENTIVE MAINTENANCE / MINOR TROUBLESHOOTING

Exercise 1.2: Minor Troubleshooting - Continued

There are three lights located at the upper righthand edge of the graphics tablet pad (Figure 1.2-D). These lights indicate the status of the light pen. Check to see that the **READY** light (1) is "On." If the **READY** light is not illuminated check to see that the **POWER SWITCH** at the pen's power source (the small box to which the pen is attached) is "On" and that the switch is illuminated. If the switch is "Off" turn it to the "On" position and check to see if the **READY** light is "On." If the **READY** light is "On," press the pen down on the surface of the tablet and check to see that the **PDWN** light (2) illuminates. As the pen nears the surface of the tablet the **PROXIMITY** light (3) should also illuminate. If the **POWER SWITCH** is "On" and the lights do not illuminate, stop and call for maintenance assistance.

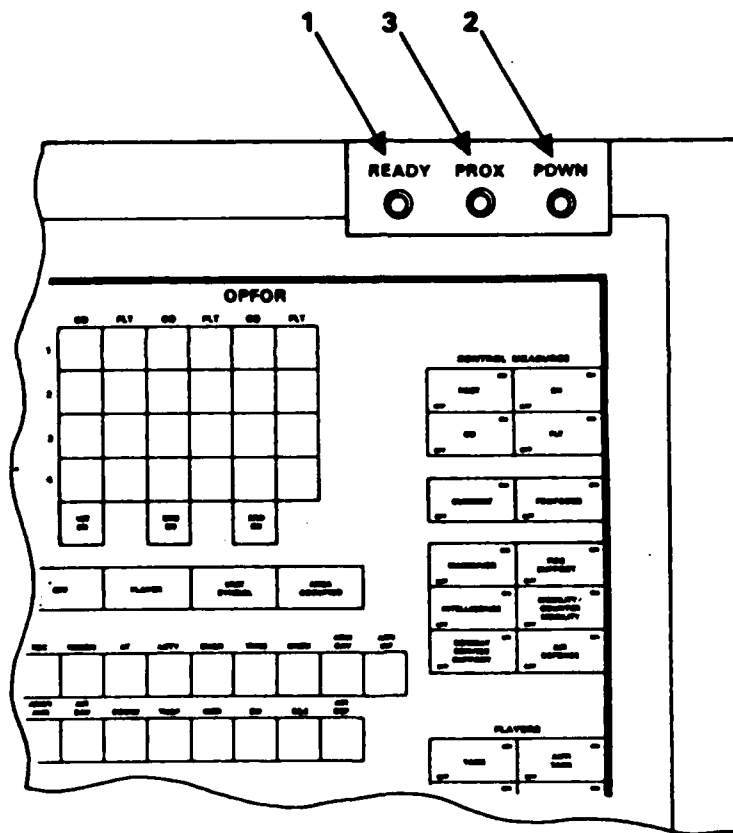


Figure 1.2-D. Light Pen Status Lights

SECTION 2: MAP CONTROL

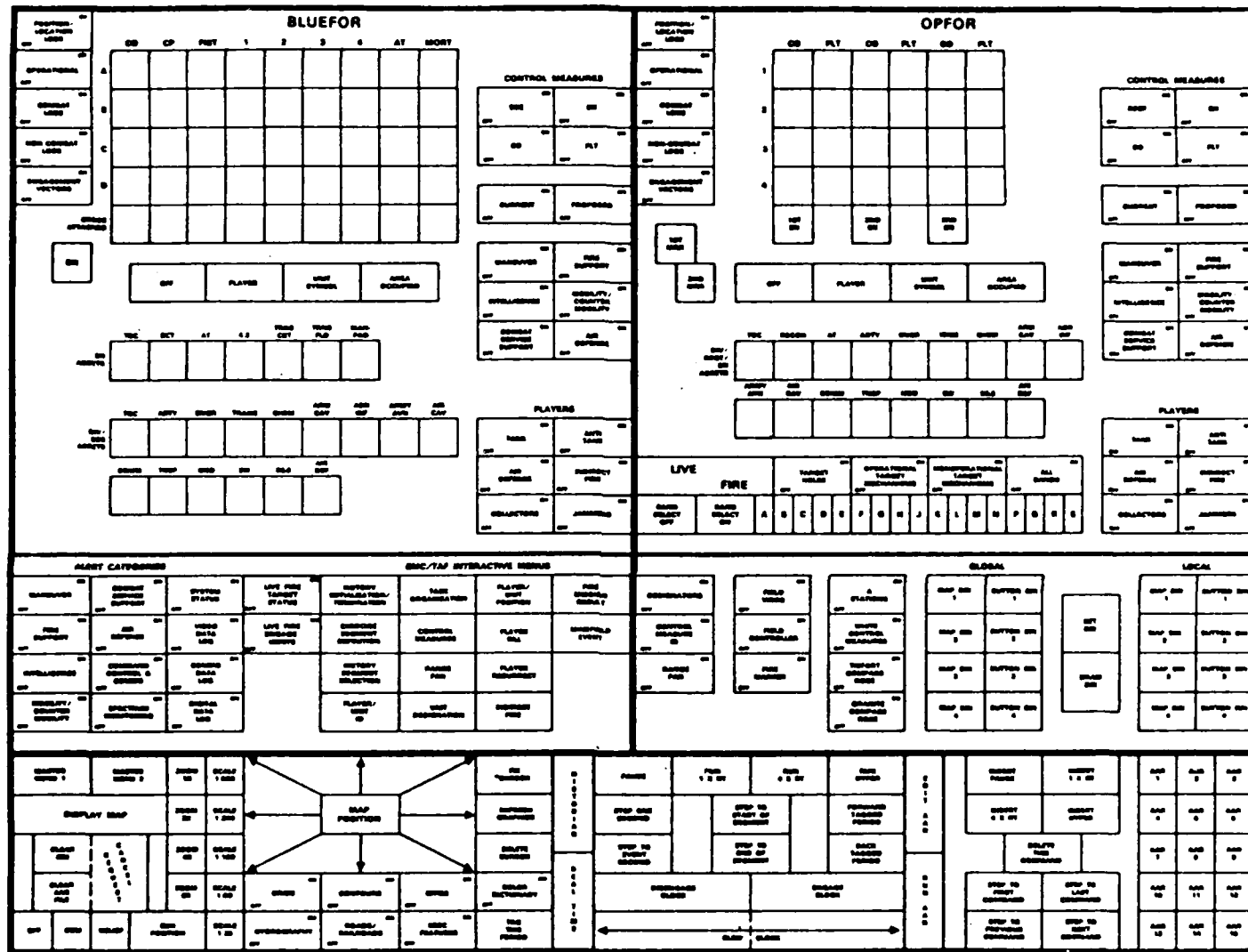
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SECTION 2: MAP CONTROL

The various functions available on the DeAnza are activated by placing the graphics tablet pen over the "button" on the tablet that is labeled with the particular function you wish to select and pressing down firmly. This action is referred to as "pen down" and all buttons on the tablet are activated in this manner.

Figure 2-A shows the DeAnza graphics tablet in its entirety. Many of the figures in this manual will be represented as "cutouts" or partial representations of the graphics tablet. For your convenience, there is a picture of the graphics tablet at the back of this manual which may be removed and used during your training sessions.

SECTION 2: MAP CONTROL



SECTION 2: MAP CONTROL

Exercise 2.1: Centering and Moving the Cursor

This exercise is designed to demonstrate the relationship between pen down positions on the tablet and cursor movement on the monitor when the map is activated.

Note: Whenever a function button is referred to in this text it will appear in upper case letters. For example, the first button you will activate is the **DISPLAY MAP** button.

2.1.1 Display the Map

Perform a pen down on the **DISPLAY MAP** button (Figure 2.1-A, (1)). The **DISPLAY MAP** button enables you to view any of the several map backgrounds available on the DeAnza Graphics Display.

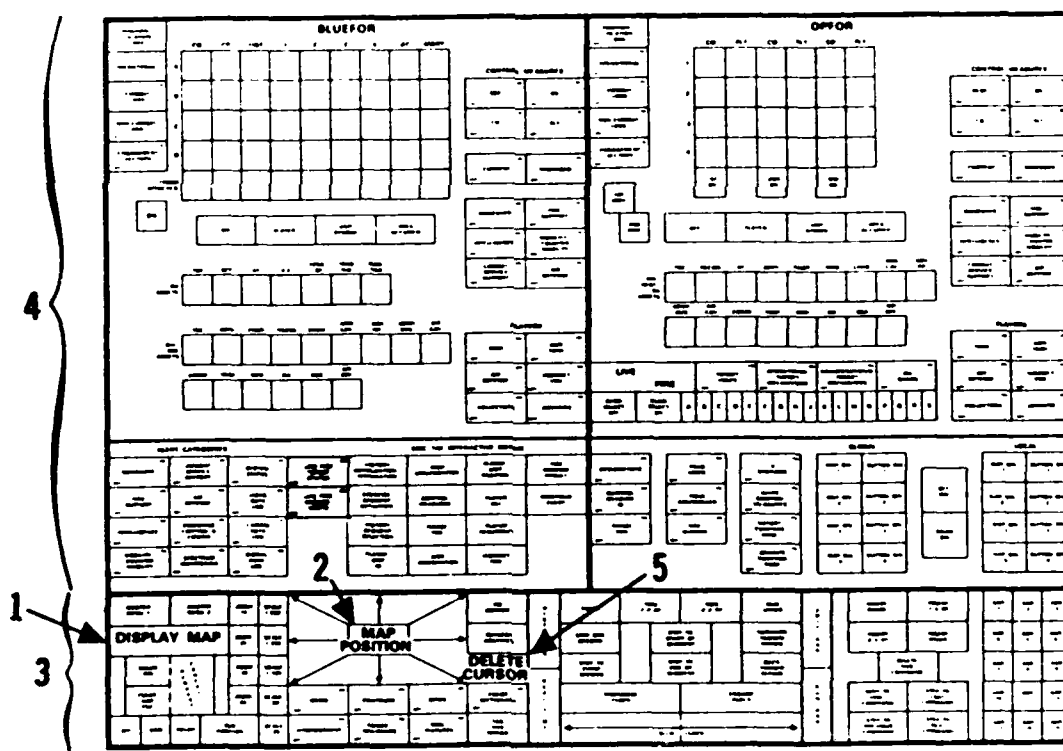


Figure 2.1-A. Function Buttons for Centering and Moving the Cursor.

SECTION 2: MAP CONTROL

Exercise 2.1: Centering and Moving the Cursor - Continued

2.1.2 Activate the Cursor

Perform a pen down on the **MAP POSITION** button (Figure 2.1-A, (2)). The crossed lines that appear on the display form the cursor. The cursor is used to control the center of the map. Manipulation of the cursor enables you to view any location on the map by centering the cursor in the desired location.

2.1.3 Moving the Cursor

Keeping the pen down position, move the pen lightly (soft pen down) across the entire surface of the tablet. This action should cause the **PROXIMITY** light to illuminate. Compare the cursor position on the display with the pen down position on the tablet. The cursor will move on the display at the same speed and in the same direction as the pen moves on the tablet. You will notice that when the pen moves into the lower area of the tablet (Figure 2.1-A, (3)), the cursor moves off the display. Only the upper 75% of the tablet (Figure 2.1-A, (4)) corresponds to the map on the display.

2.1.4 Centering the Cursor

Select a location on the map and perform a pen down at the desired location. This will activate the drawing of a map with its center at the cursor location you selected and the cursor will disappear. In order to reactivate the cursor and select another location on map, perform a pen down on the **MAP POSITION** button and repeat the procedure. Repeat this step until you are completely familiar with the process of drawing a map at any location.

2.1.5 Deactivate the Cursor

The cursor may be removed from the display without drawing a map with a new center by selecting the **DELETE CURSOR** button (Figure 2.1-A, (5)).

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features

This exercise is an introduction to the various map features that are available to the station operator. The digital background map on the DeAnza display monitor has a number of different attributes such as elevation contours and UTM grid lines that may be activated by the station operator. You can change the way that the map appears on the display according to the various needs of your station or simply because you prefer one map feature over another.

Each of the digital background map features is individually selectable and can be superimposed one over the other (the cross country mobility (CCM) map and relief map with sun position features are exceptions). You should perform the following actions in the order presented until you are familiar with and can activate all of the map features.

2.2.1 Cross Country Mobility (CCM)

Perform a pen down on the **CCM** button on the graphics tablet (Figure 2.2-A, (1)). This action activates the CCM map. Each of the **CCM** classes applicable to Ft. Irwin terrain is represented by a different color on this map. Each color represents a degree of difficulty in traversing terrain. The darker the color, the more difficult the terrain is to cross.

2.2.2 Map Scale

The digital background map can be displayed on the monitor in the following scales:

<u>Scale</u>	<u>SCALE Buttons</u>
1 : 500,000	SCALE 1:500
1 : 250,000	SCALE 1:250
1 : 100,000	SCALE 1:100
1 : 50,000	SCALE 1:50
1 : 25,000	SCALE 1:25

Perform a pen down on each of the **SCALE** buttons (Figure 2.2-A, (2)) and compare the terrain features at different levels of scale.

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

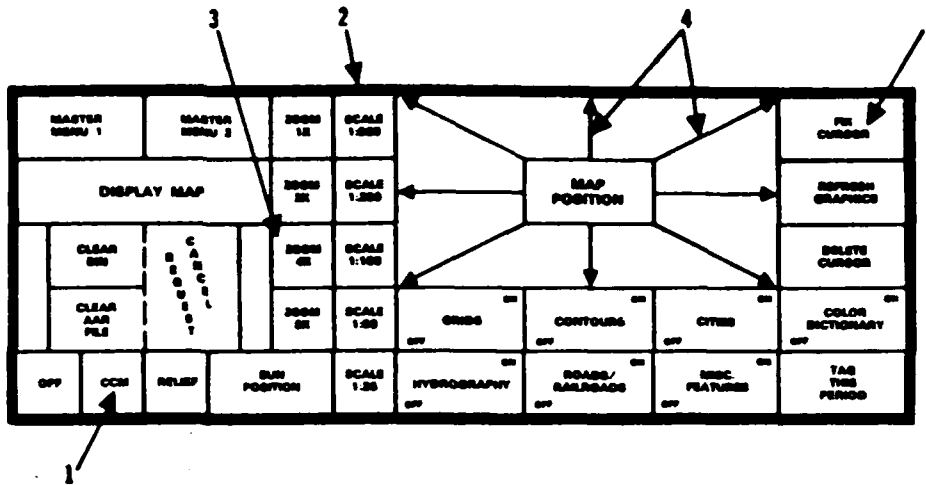


Figure 2.2-A. Function Buttons for Map Features.

2.2.3 Zoom

Map zoom levels are activated by a pen down on the appropriate zoom button on the graphics tablet. When you are not using the zoom feature at level 2x, 4x, or 8x, the map is automatically displayed at the zoom 1x level.

Set the scale of the map to 1:100,000 and perform a pen down on the **ZOOM 4X** button (Figure 2.2-A, (3)). The map that appears on the display has the same scale as a 1:25,000 map with some loss of resolution. Compare the resolution of the map on the display (1:100,000 map at zoom 4x) with the 1:25,000 map by returning to zoom 1x (pen down at **ZOOM 1X**) and setting the scale to 1:25,000.

2.2.4 Scrolling the Map

The scrolling feature is only active at the 2x, 4x, and 8x zoom levels. Once you are in zoom 2x or greater, the map can be scrolled in any direction by doing a pen down on any one of the arrows that surround the **MAP POSITION** button (Figure 2.2-A, (4)). The map will scroll as long as the pen down is maintained on an arrow. However, the scrolling is limited to the boundaries of the map display in zoom 1x.

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

2.2.4 Scrolling the Map

Set the map scale at 1:100,000 and the zoom level at 2x. Perform a pen down on any of the arrows and hold the pen down until the map stops scrolling. When the map stops scrolling, you have reached the boundary of the map that would be displayed on the screen if the zoom level were 1x. Compare the location of the terrain at the point where the scrolling stopped with the terrain on the map in zoom level 1x by doing a pen down on the **ZOOM 1X** button. Change the scale to 1:50,000 and activate the zoom 4x level and repeat the procedure scrolling in a different direction.

As you scroll the cursor, a new map can be drawn at any desired location by performing a pen down on the **FIX CURSOR** button (Figure 2.2-A, (5)) as the scroll passes over the location.

2.2.5 Relief

Change the map scale to 1:100,000 and return to zoom 1x. Perform a pen down on the **RELIEF** button (Figure 2.2-B, (1)). The relief map will appear on the display. This map represents the Ft. Irwin terrain in elevation relief. Activate the cursor and center the map at a new location. Practice moving the cursor on the relief map background. Return to the CCM feature by performing a pen down on the **CCM** button and compare the terrain. The location of the map remains exactly the same, only the background changes.

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

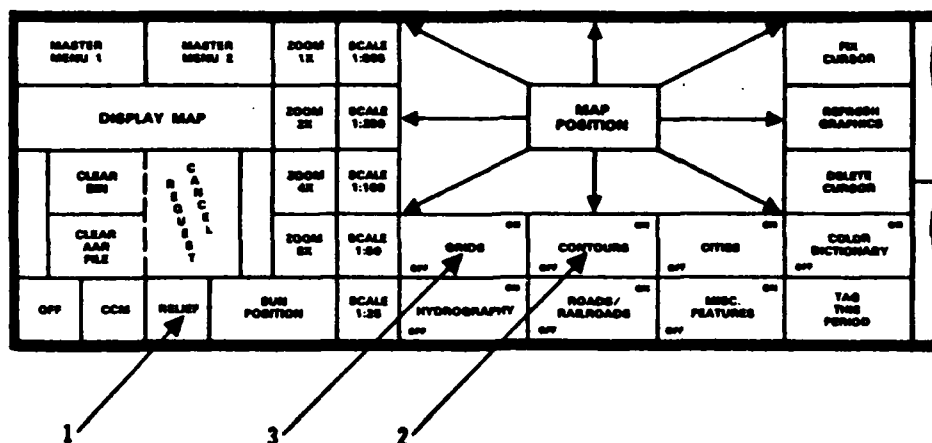


Figure 2.2-B. Relief, Contours, Grids, and Color Dictionary Buttons.

2.2.6 Elevation Contours

Set the map scale to 1:100,000 and activate the CCM map. Perform a pen down on the **CONTOURS** button (Figure 2.2-B, (2)) at "On". The lines that appear on the display are superimposed over the CCM map. These lines represent the elevation contours for the particular location on the map. The spacing for each of these lines is tailored to the map scale. The contour spacing for each map scale is:

<u>Map Scale</u>	<u>Contour Spacing</u>
1 : 500,000	No contour lines
1 : 250,000	100 meters in elevation
1 : 100,000	40 meters in elevation
1 : 50,000	20 meters in elevation
1 : 25,000	10 meters in elevation

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

Change the map scale by performing a pen down on any **SCALE** button and compare the contour lines. Change the map background from CCM to relief and look at the lines superimposed over the relief map. Turn the contour lines off by doing a pen down on the "Off" portion of the **CONTOURS** button.

2.2.7 UTM Grid Lines

Activate the CCM map. Perform a pen down on the **GRIDS** button (Figure 2.2-B, (3)) at "On". The UTM grid lines that appear on the display are represented in black and are tailored to the map scale. Grid spacing for each map scale is:

<u>Map Scale</u>	<u>Grid Spacing</u>
1 : 500,000	10 KM
1 : 250,000	10 KM
1 : 100,000	1 KM
1 : 50,000	1 KM
1 : 25,000	1 KM

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

2.2.7 UTM Grid Lines

UTM coordinate values are displayed in Figure 2.2-C on each grid line along the upper (1) and left hand (2) display margins.

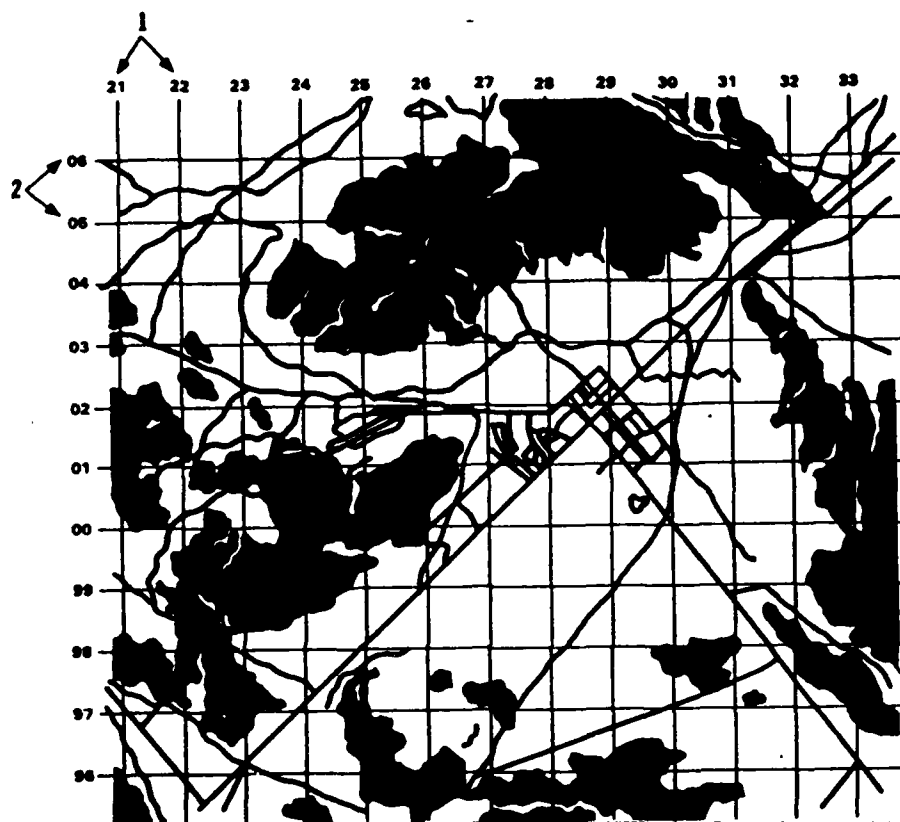


Figure 2.2-C. UTM Grid Coordinates.

Grids may be superimposed over all map backgrounds. Perform a pen down on the **RELIEF** button. The grids will appear superimposed over the relief map on the display. Perform a pen down on the **CONTOURS** button and the grids will appear on the elevation map. The grid lines may be turned off at any time by a pen down on the "Off" portion of the **GRIDS** button. Practice displaying UTM grids on the different background maps at different scales.

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

2.2.7 UTM Grid Lines

Return to the CCM map and perform a pen down on the **OFF** button next to the **CCM** button at bottom left of tablet. The green map that appears on the display shows only the grids. The CCM classes are no longer visible. This map is useful for the display and identification of individual players (see Section 3: Unit/ Player Control) and can be used with various superimposed features such as elevation contours or UTM grids. The **OFF** button can be activated from either the CCM or relief maps without the loss of superimposed features. Activate the relief map with elevation contours and grids and do a pen down on the **OFF** button. UTM grids and elevation contours will be displayed against a solid green background.

2.2.8 Infrastructure

A number of infrastructure attributes can also be superimposed over the various map backgrounds. The following infrastructure attributes are available:

- o Cities
- o Roads/Railroads
- o Hydrography
- o Miscellaneous features, including:
 - Power stations
 - Dams
 - Tunnels
 - Natural fords
 - Improved fords
 - Nature surfaced airfield/landing zone (AF/LZ)
 - Improved surface AF/LZ.

Return to the CCM map and set the map scale to 1: 500,000. A green map will appear on the display. Perform a pen down on the "On" portion of the **CITIES** button. The rectangular box highlighted in white in the lower left section of the map represents the city of Barstow. Activate the **MISC. FEATURES** button and Ft. Irwin will be outlined on the map in white. Locate the Ft. Irwin garrison area and center the map over the garrison. Set the map scale to 1:100,000 and turn off **MISC. FEATURES**.

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

2.2.8 Infrastructure

Turn off the **CITIES** button and turn on the **ROADS/RAILROADS** button. Roads and railroads will be displayed highlighted in red.

Activate the relief map background and then turn **CITIES** on again. You will see that both cities and roads/railroads are superimposed over the relief map. Turn on **HYDROGRAPHY** and **MISC. FEATURES**. All infrastructure attributes may be superimposed over one another as well as over the map background at the same time. Center the map in a new location and display the various infrastructure attributes. Practice changing the map background (for example, turn on the elevation countours map) and displaying the various infrastructure attributes at different scales.

Return to the CCM map and center the map at the Ft. Irwin garrison. Activate the 1:50,000 scale and activate the zoom 2x level. One at a time, turn each of the infrastructure features on and off. Be aware that even though your map scale is set to 1:50,000, the infrastructure features superimposed on the map actually are being displayed at 1:25,000 scale (the equivalent of 1:50,000 scale at zoom level 2x).

You may have noticed that the lines and images on the display degrade or decay over time. To restore the display to its original clarity, perform a pen down on the **REFRESH GRAPHICS** button located directly to the right of the map position arrows. This button can be used at any time to renew the images on the display without changing the display itself.

Another feature which is useful in connection with both the infrastructure attributes and the CCM map is the color dictionary. Perform a pen down on the "On" portion of the **COLOR DICTIONARY** button located to the right and below the map position arrows. The right-hand margin will display the color dictionary which identifies the functional characteristics of the color features. The display consists of a descriptive message or acronym and a swatch of the color used to represent the feature. The dictionary display presents the colors that are used to represent Cross-Country Mobility classes and infrastructure attributes. When you have examined the color dictionary feature, turn it to the "Off" position.

SECTION 2: MAP CONTROL

Exercise 2.2: Map Features - Continued

2.2.9 Sun Position

The **SUN POSITION** button is used only with the relief map. This button allows you to have dynamic control of the sun position and thus the shading on the relief map.

Set the map scale to 1:100,000. Turn on the relief map and the **SUN POSITION** button. A "Select Sun Position" prompt message will appear in the left-hand margin of the display highlighted in yellow.

When the **SUN POSITION** button is "On", the eight map position arrows that were used previously to move the cursor, can now be used to control the position of the sun on the map. When you perform a pen down on an arrow, the shading on the relief map will be altered to depict the terrain as it would appear if the sun were in the selected position. Practice moving the position of the sun on the relief map by performing a pen down on each of the map position arrows until you find the shading that best reveals the details of the terrain on the map.

*After the desired sun angle has been chosen, you must turn off the **SUN POSITION** button in order to reactivate the cursor movement feature on the arrow buttons.* When the **SUN POSITION** button is deactivated by a pen down on the "Off" portion of the button, the "Select Sun Position" prompt message in left margin will disappear.

SECTION 2: MAP CONTROL

Exercise 2.3: Real Time Data Displays

2.3.1 Left-Hand Margin Display

The left hand margin on the graphics display monitor displays the following operational and display parameters (Figure 2.3-A):

o Exercise date (1).

The date is presented as day, month, year in the format DDMMYY (for example, 27 Oct 84).

o Exercise time (2).

Time is displayed as a 24-hour clock presenting hours, minutes, and seconds of the day.

o Link status/Time status (3).

Link status indicates the status of the link between the Range Data Measurement Subsystem (RDMS) which provides the real-time position/location and engagement event data on all instrumented players and the Core Instrumentation Subsystem (CIS) which provides the data processing and interactive display capabilities which allow you to monitor and store Engagement Simulation and Live Fire exercise activities.

When the CIS-RDMS link is operational and your station is able to receive data from RDMS, "LINK UP" is displayed. When the CIS is unable to receive data from RDMS, "LINK DOWN" is displayed.

If the time displayed at Exercise Time (2) should trail real time by thirty seconds or more (that is to say, the lag time between RDMS transmission and CIS data processing and display on the monitor equals or is greater than 30 seconds), "DATA ERR" will be displayed in place of "LINK UP" or "LINK DOWN."

SECTION 2: MAP CONTROL

Exercise 2.3: Real Time Data Displays - Continued

2.3.1 Left-Hand Margin Display

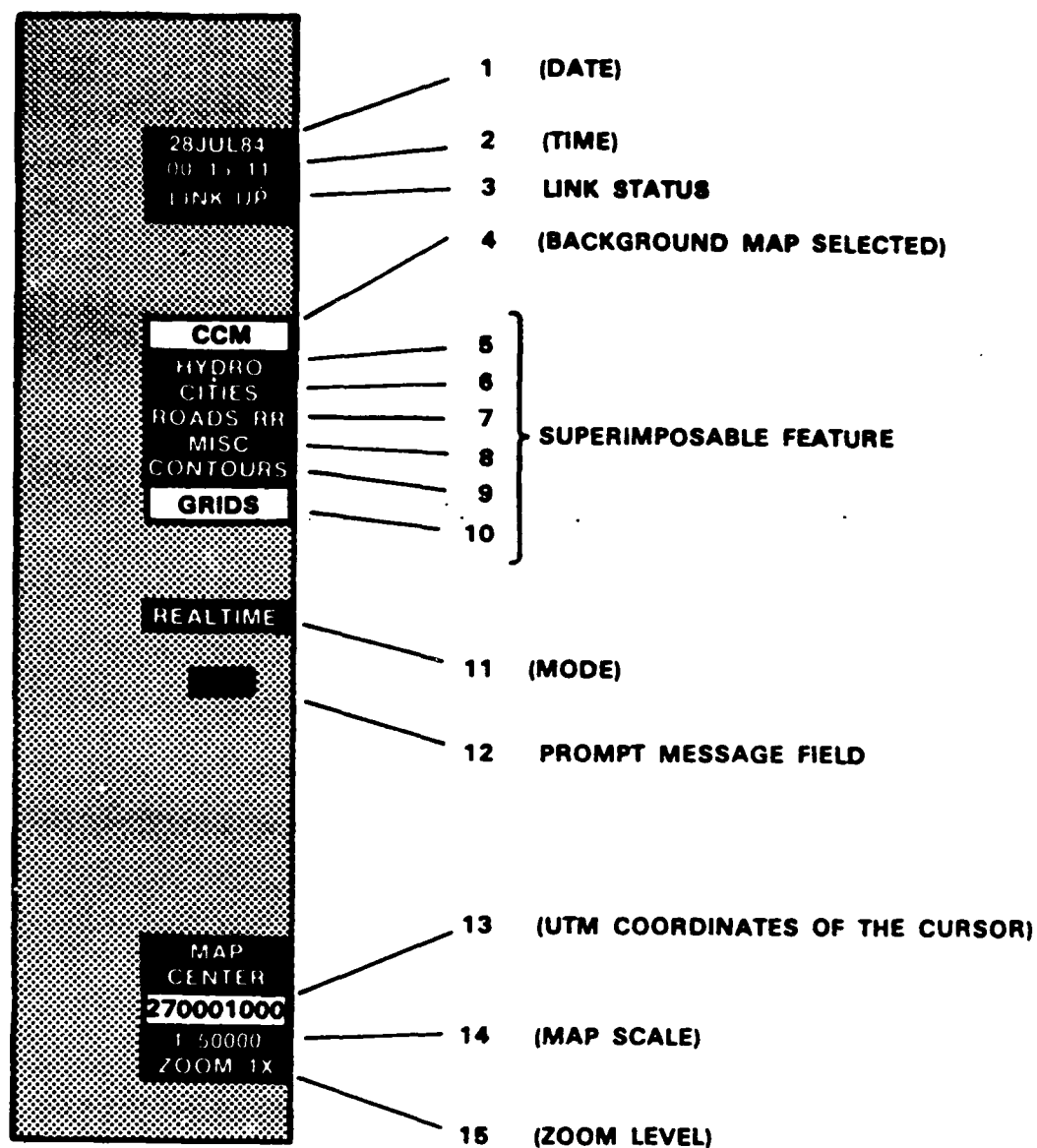


Figure 2.3-A. Real Time Data Display (Left-Hand Margin).

SECTION 2: MAP CONTROL

Exercise 2.3: Real Time Data Displays - Continued

2.3.1 Left-Hand Margin Display

o Selected map and attributes (Figure 2.3-A, (4-10)).

The map background that you have selected to appear on the display is indicated in the left margin highlighted in white (4). Each time you select a superimposable feature to appear on the display, the feature selected will be highlighted in the left margin (5-10). For example, if you activate the CCM map with grids and cities to be superimposed, "CCM" (4) and "GRIDS" (10) will be highlighted in the margin. Activate the relief map and select **MISC. FEATURES**, and **HYDROGRAPHY** to be superimposed. Check the left margin to verify that these features have been activated.

o Mode (Figure 2.3-A, (11)).

The modes of operation are REALTIME, HISTORIAN, EDIT AAR, and RUN AAR. These features will be discussed in Section 6.

o Prompt message field (Figure 2.3-A, (12)).

Prompt messages are displayed in yellow to permit quick operator recognition of the message. The following prompt information is provided to you:

- Select history segment
- Select map center
- Select sun position
- Select bin
- Select AAR file

Activate the relief map and turn on the **SUN POSITION** button. The prompt message, "Select sun position" will appear in the left margin. The message will remain on the display until you select a sun position and turn off the button.

SECTION 2: MAP CONTROL

Exercise 2.3: Real Time Data Displays - Continued

2.3.1 Left-Hand Margin Display

- o UTM coordinates of the cursor (Figure 2.3-A, (13)).**

Map center coordinates are provided immediately upon activation of the cursor and selection of a new map center.

Activate the cursor and center map in a new location. The UTM coordinates of the map center (13) will change each time a new map center is selected.

Move the cursor over the map area by performing a soft pen down and moving the pen continuously over the tablet surface. The cursor coordinate values are displayed continuously as the cursor is moved. This allows you to search for specific UTM coordinates before selecting a new map center.

- o Map display level (Figure 2.3-A, (14)) and zoom level (Figure 2.3-A, (15)).**

The current map display level or map scale is displayed at the lower left margin (14). The zoom display level (15) is highlighted in yellow when scroll capability is available (that is when zoom level is 2x or greater).

2.3.2: Right-Hand Margin Display

The right hand margin on the graphics display monitor displays the update period summary statistics. These statistics represent five minute period cumulative values and are updated every five minutes. The time of the last update in hours, minutes, and seconds format (HH:MM:SS) is displayed on the top line of the right margin (Figure 2.3-B, 1). The manipulation of the display on the monitor has no effect on the statistics represented in the right margin. The statistics are displayed in the following formats:

- o Overall Force Value (OFV).** This value represents the sum of the total value of live BLUEFOR and OPFOR weapons systems. (Figure 2.3-B, 2)

Line 1	OFV B-R (Blue-Red)
Line 2	NNN-NNN

SECTION 2: MAP CONTROL

Exercise 2.3: Real Time Data Displays - Continued

2.3.2 Right-Hand Margin Display

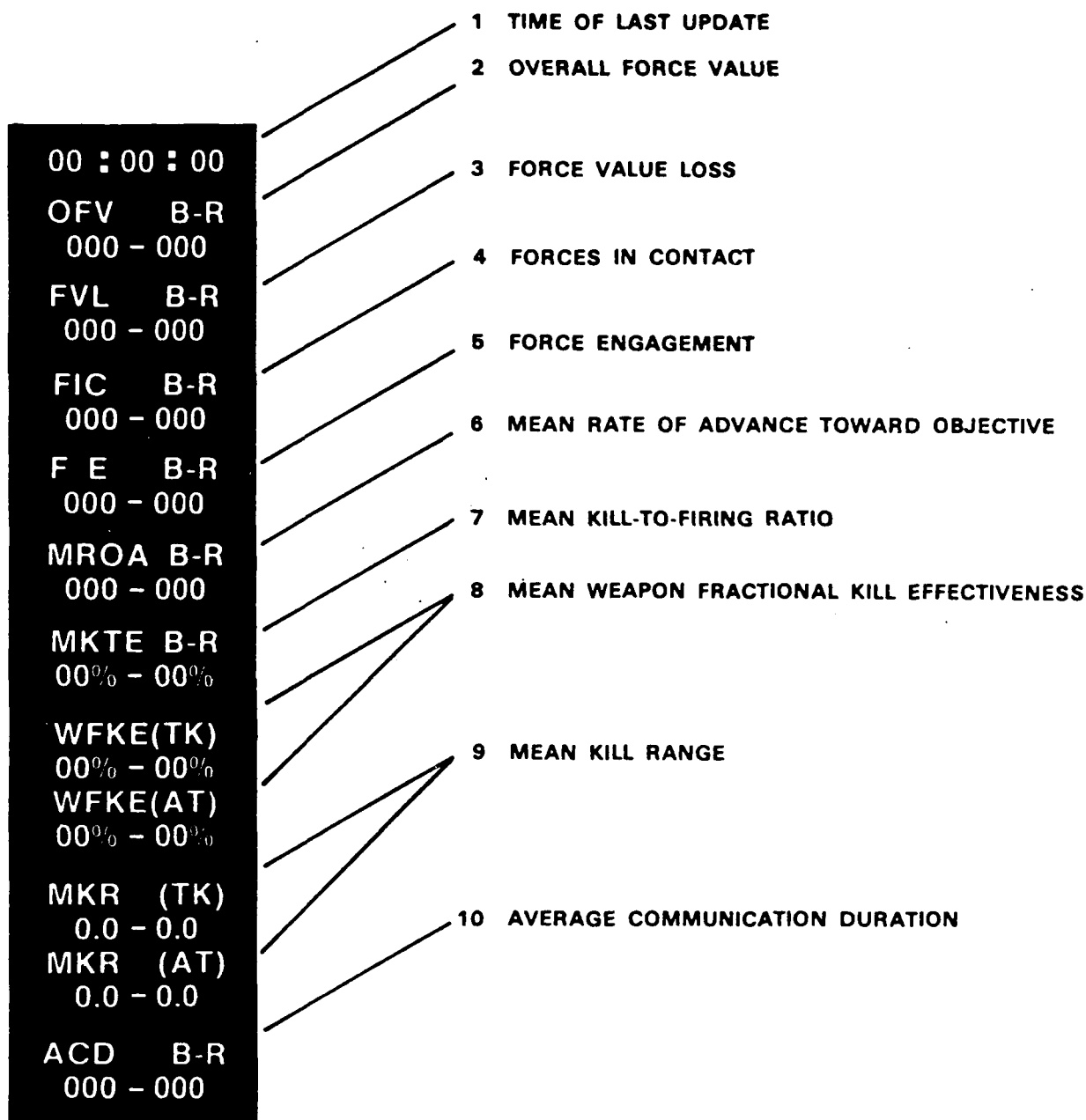


Figure 2.3-B. Right-Hand Margin Display.

SECTION 2: MAP CONTROL

Exercise 2.3: Real Time Data Displays - Continued

2.3.2 Right-Hand Margin Display

o Force Value Loss (FVL). This value represents the total value lost during the 5-minute update period. (Figure 2.3-B, 3)

Line 1 FVL B-R

Line 2 NNN-NNN

o Forces in Contact (FIC). When there is a pairing (i.e., near miss, hit, or kill) between a firer and a target, the platoons to which the firer and the target are attached are considered to be in contact. This measure is computed as a total number of BLUEFOR and OPFOR platoons in contact during an update period. A Platoon is considered being in contact only once during each 5-minute update period. (Figure 2.3-B, 4)

Line 1 FIC B-R

Line 2 NNN-NNN

o Force Engagement (FE). When a weapon-target pairing occurs (i.e., near miss, hit, or kill) between opposing instrumented players (BLUEFOR vs. OPFOR), the firer weapon will be considered to be engaged. The total force engaged on each side is represented by the total of all of its weapons which have been engaged during the 5-minute update period. A weapon is counted as engaged only once during an update period. (Figure 2.3-B, 5)

Line 1 FE B-R

Line 2 NNN-NNN

o Mean Rate of Advance Toward Objective (MROA). This value represents the rate of advance projected on the line from the unit's current center of mass to a manually designated destination. An instantaneous value (representing the present period) and a mean value (representing the mean across all eriods to date) are computed for this measure. Values are expressed in kilometers per hour. (Figure 2.3-B, 6)

Line 1 MROA B-R

Line 2 NNN-NNN

SECTION 2: MAP CONTROL

Exercise 2.3: Real Time Data Displays - Continued

2.3.2 Right-Hand Margin Display

o **Mean Kill-to-Firings Ratios (MKTF).** This value represents the ratio of total firings to kills for BLUEFOR and OPFOR weapons during the 5-minute update period. (Figure 2.3-B, 7)

Line 1 MKTF B-R

Line 2 NN%-NN%

o **Mean Weapon Fractional Kill Effectiveness (WFKE): Tank (TK) and Anti-Tank (AT) (BLUEFOR-OPFOR).** These values represent the total number of enemy players killed by friendly weapon type (TK and AT) divided by the total number of enemy players killed. (Figure 2.3-B, 8)

Line 1 WFKE (TK) WFKE (AT)

Line 2 NN%-NN% NN%-NN%

o **Mean Kill Range Tank (TK) and Anti-Tank (AT) (MKR): BLUEFOR-OPFOR.** These values represent the range from weapon to target for weapon kills. Range values are to the nearest tenth of a kilometer. (Figure 2.3-B, 9)

Line 1 MKR (TK) MKR (AT)

Line 2 N.N-N.N N.N-N.N

o **Average Communications Duration (ACD): BLUEFOR-OPFOR.** These values represent the average transmission duration (in seconds) of all completed transmissions during a 5-minute update period. (Figure 2.3-B, 10)

Line 1 ACD B-R

Line 2 NNN-NNN

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

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SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.0: History Segment Selection

If you are learning to use the DeAnza during a period when the battalion under training has already begun its rotation but is not actually undergoing a training exercise in the field, you have the capability to select a history segment (i.e., an exercise that has already been recorded) for replay so that you can see the results of each of the following exercises on the display while you are actually doing them.

You can select a history for replay by performing a pen down on the **HISTORIAN** button (next to the **FIX CURSOR** button in the lower portion of the graphics tablet) and then doing a pen down on the **HISTORY SEGMENT SELECTION** button in the EMC/TAF Interactive Menu section of the tablet. An interactive menu will appear on the display with prompts that will assist you in the selection of an exercise segment for replay.

Follow the directions that accompany the interactive menu on the display. Selections on the interactive menus are made by performing a pen down on the area of the graphics tablet that corresponds with the interactive menu function that appears on the display. For example, if you activate the **HISTORY SEGMENT SELECTION** button while Master Menu 1 is on the display, the CCM map and the cursor will both appear on the display with an interactive menu superimposed over the map (see Figure 3.0-A).

The "Select History Segment" box (1) in the lower left hand corner of the new display (Figure 3.0-A) contains the prompt message, "Select History," in the area which is highlighted in red (2). The smaller box in the center of the display (3) contains the history segments that are available for replay. You select a history segment by moving the cursor to that portion of the tablet that corresponds to the segment label on the display that you wish to select and performing a pen down (4).

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.0: History Segment Selection - Continued

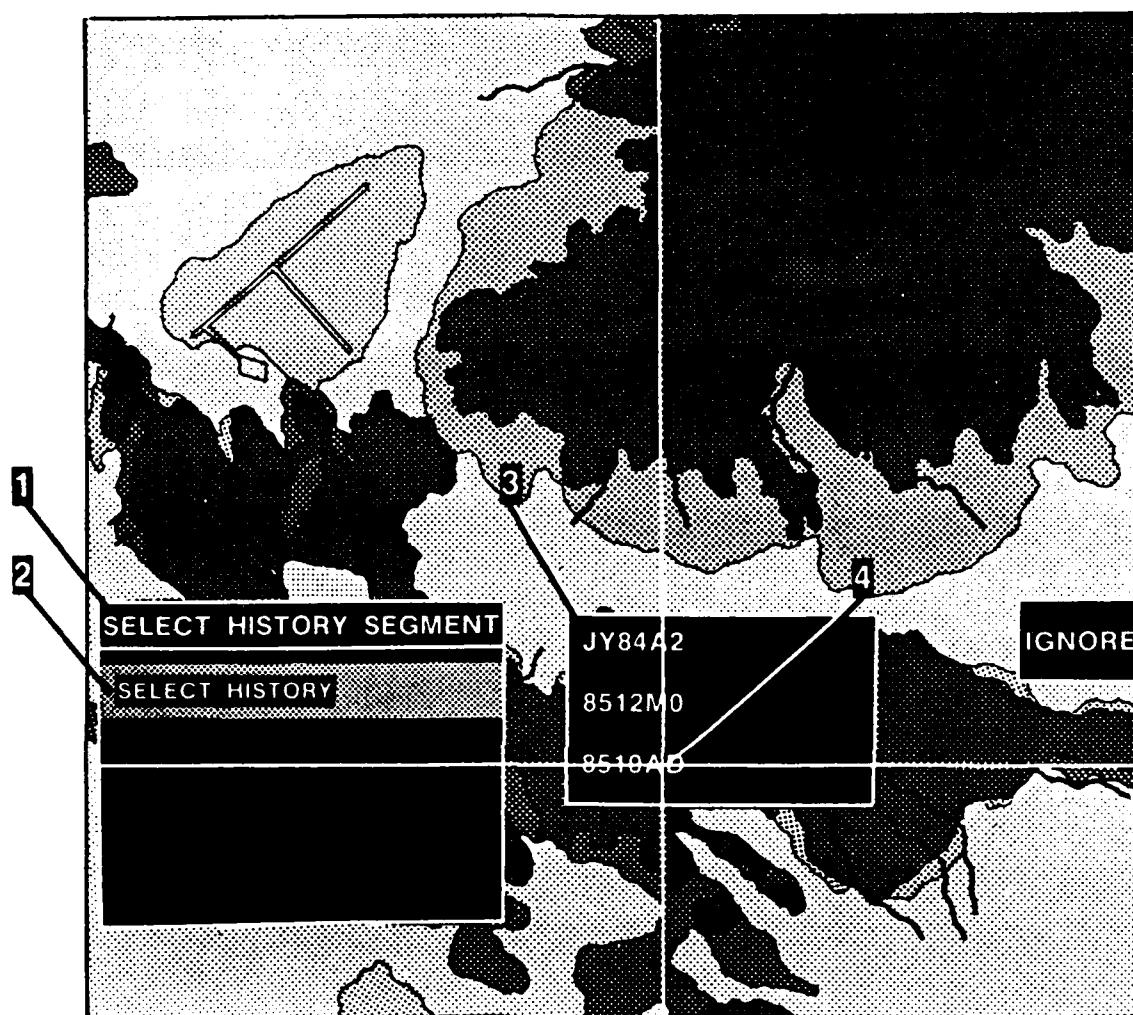


Figure 3.0-A. History Segment Selection Interactive Menu.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.0: History Segment Selection - Continued

Once you have selected a history segment, the box containing the segment labels will disappear and be replaced with a similar box containing exercise labels (Figure 3.0-B). A new prompt message, "Select Segment," will appear in the "Select History Segment" box in the lower left corner of the display.

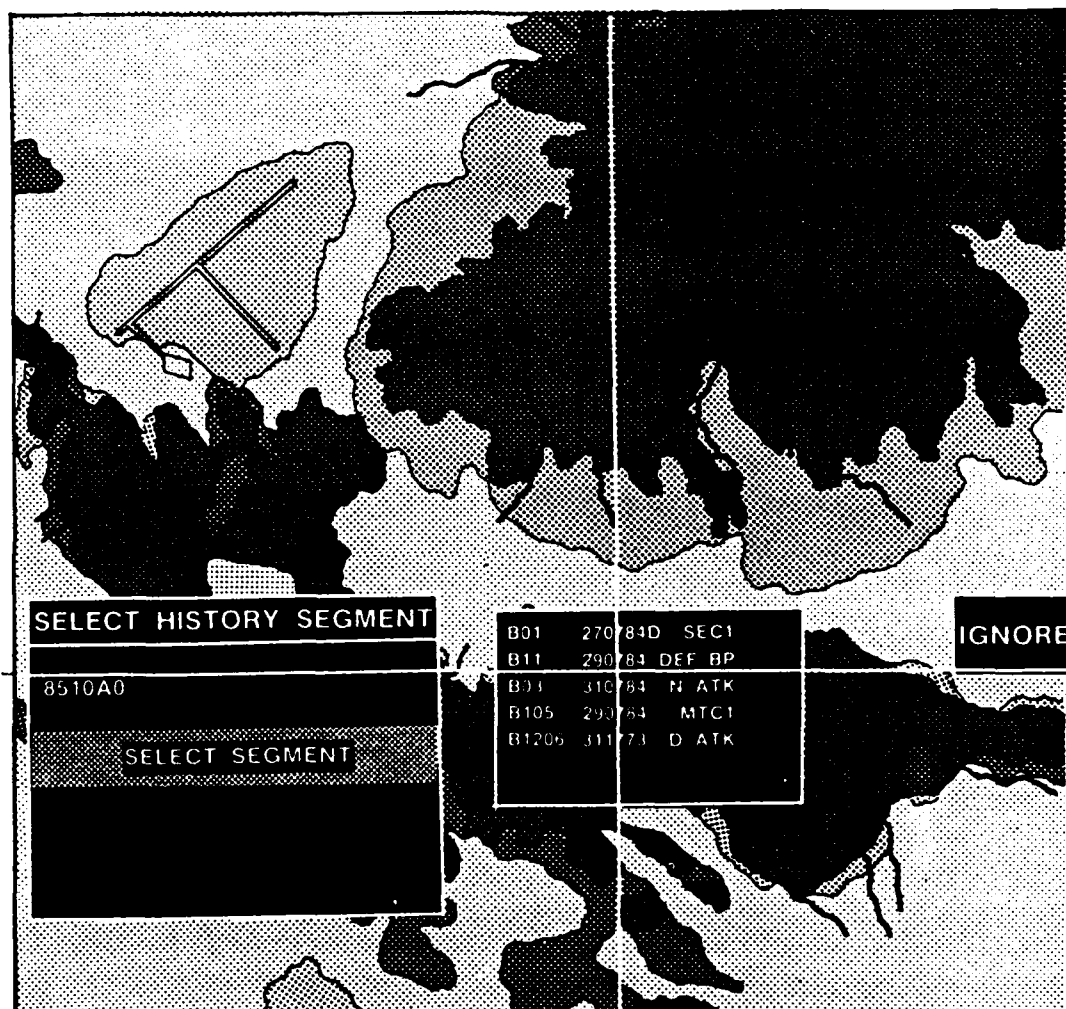


Figure 3.0-B. Select History Segment.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.0: History Segment Selection - Continued

Follow the same procedure in the selection of an exercise segment that you used to select the history segment. When you have selected an exercise, the box containing the exercise labels will disappear from the display and a small box that says "Done" will appear in the lower right-hand corner of the display (Figure 3.0-C (1)). The "History Segment Selection" box (Figure 3.0-C (2)) will now display your history segment and exercise selections along with the prompt message "Terminate Menu" (3, 4, and 5). You terminate the menu by performing a pen down in the "Done" box. The "Ignore" box (6) which is present throughout menu use (6), allows you to ignore a selection and exit the menu at any time.

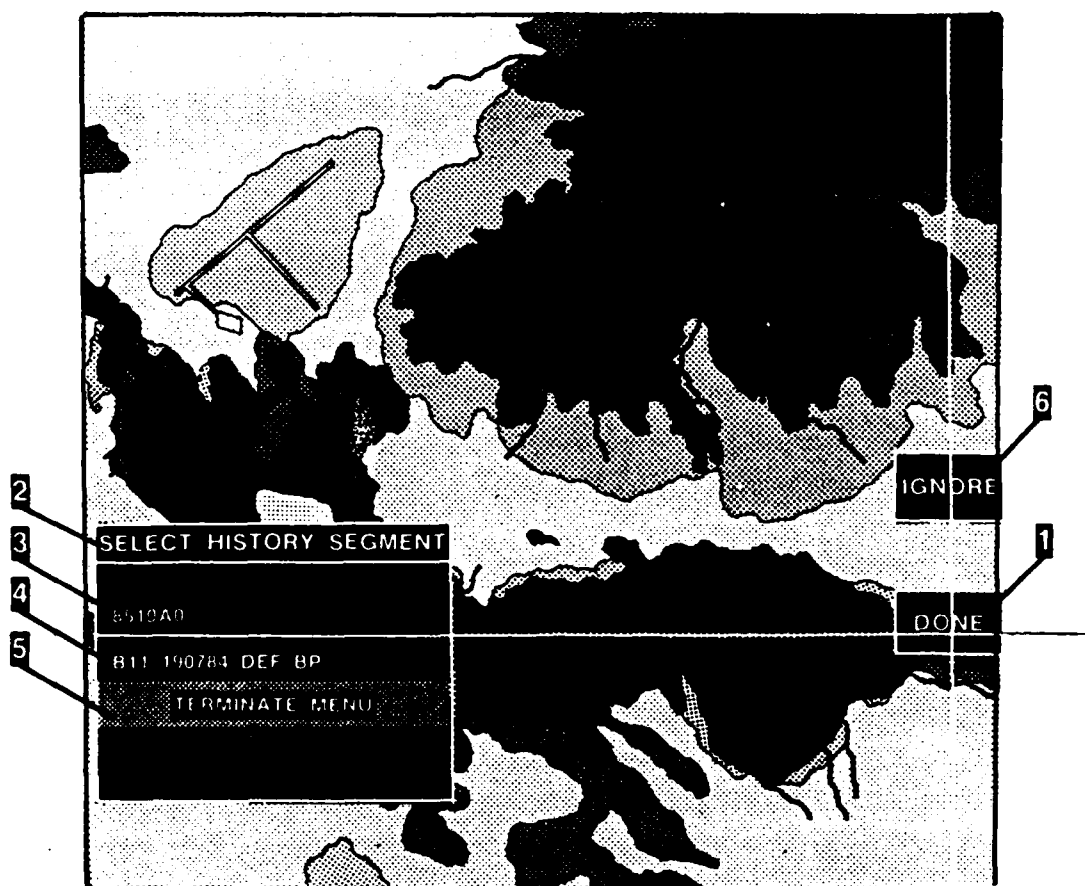


Figure 3.0-C. Termination of the Interactive Menu.

Once you have selected a history segment for replay, you will have the capability to see the results of symbology assignments as you perform the practice exercises by moving back and forth between the Master Menu and the background map of your choice. History segment selection and the manipulation of the display in the "Historian" mode are discussed in Section 6.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.1: Display Formats

One of the primary functions of the DeAnza graphics display is to give you the capability to monitor BLUEFOR and OPFOR battalion activity by selectively displaying the battalion and its assets as symbols (i.e., tactical symbology) on the digital background maps that were discussed in Section 2.

Control of the display of tactical symbology works the same way for both menus, therefore for the purpose of simplification, the following discussion and exercises shall refer only to Master Menu 1 (BLUEFOR) controls.

Master Menus 1 and 2 control the display of BLUEFOR and OPFOR tactical symbology. BLUEFOR symbology spans five echelons: platoon, company, battalion, brigade, and division. OPFOR symbology also spans five echelons: platoon, company, battalion, regiment, and division. The BLUEFOR player symbols are displayed in blue on the monitor. OPFOR player symbols are displayed in red.

Activate Master Menu 1 by performing a pen down on the **MASTER MENU 1** button located at the lower left portion of the graphics tablet. The menu labeled "BLUEFOR" on the graphics tablet will appear on the display monitor in blue.

The tactical symbology that represents the units under training may be displayed on the background map in three different formats:

- 1) as unit symbols in FM 21-30 format,
- 2) in an "area-occupied" format, and
- 3) as individual player symbols
(for example, vehicles, weapons, etc.).

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.1: Display Formats - Continued

The buttons labeled "Area 1" in Figure 3.1-A control the format of the tactical symbology displayed for BLUEFOR players as they have been task organized. For this exercise, it is assumed that task organization parallels line organization.

The activation of the format buttons (Figure 3.1-A, Area 1) gives you the ability to assign the format of the display to the echelon(s) of players that you want to see on the monitor. Only one format button may be activated at any one time. A pen down on any of these buttons, activates its function and deactivates the functions of the other three. For example, if the **UNIT SYMBOL** button is activated, the **PLAYER**, **AREA-OCCUPIED**, and **OFF** buttons are deactivated.

BLUEFOR									
	CO	CP	PIST	1	2	3	4	AT	MORT
A									
B									
C									
D									

AREA 1

CHIEF ATTACHED

ON

OFF

PLAYER

UNIT SYMBOL

AREA OCCUPIED

IN ASSETS

TBC SCT AT 4.2 TIME CPT TIME FLD MAR PAD

OFF / SIDE ASSETS

TBC APTY EVER TRANS CHES LMS CAV ASP ASP ARMY AVE AIR CAV

COMB TRUP MED EV BSA ASP

CONTROL MEASURES

SEE ON

CO FLT

CURRENT PROPOSED

MANEUVER FIRE SUPPORT

HYELLING MOBILITY / COUNTER MOBILITY

CORRECTION SUPPORT AIR DEFENSE

PLAYERS

TABE APTI TABE

AIR DEFENSE DIRECT FIRE

COLLECTORS JAWING

Figure 3.1-A. Display Format Buttons, Master Menu 1.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format

3.2.1 Battalion Level Display

If you elect to display the battalion under training as a unit symbol, it will be represented by a single symbol in FM 21-30 format (see Table 3.1) on the background map. The unit symbol will be located at the Center of Mass (COM) of the battalion. The computer calculations for COM take into account all players linked to the battalion to include companies A-D, and the cross-attached company.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format - Continued

3.2.1 Battalion Level Display

TABLE 3.1
TACTICAL SYMBOLOGY

UNIT SYMBOLS



AIR DEFENSE



ARMOR



ARTILLERY



SELF-PROPELLED ARTILLERY



AIRBORNE INFANTRY



AIR CAVALRY



MECHANIZED INFANTRY



ANTI-TANK



INFANTRY



CHEMICAL DEFENSE



ARMORED CAVALRY



ENGINEER



MEDICAL



SIGNAL (COMMUNICATIONS)



TRANSPORTATION



ARMY AVIATION



ELECTRONIC WARFARE



SUPPLY AND SERVICE

MISCELLANEOUS SYMBOLS



CBT



CBT

COMBAT TRAINS

MECH INF TASK FORCE

ARMOR TASK FORCE



FLD



FLD

FIELD TRAINS

MECH INF TASK FORCE

ARMOR TASK FORCE



FIELD HEADQUARTERS

ECHELON SYMBOLS

PLATOON

...

BRIGADE

X

COMPANY

I

DIVISION

X X

BATTALION

II

REGIMENT

III

TASK FORCE/
COMPANY TEAM



MECH INF TASK FORCE

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format

3.2.1 Battalion Level Display

Battalion assets are automatically line-organized to the battalion under training. Division/brigade assets may also be displayed in all three formats with all players associated with division/brigade assets which are not organized to the battalion under training included in the COM and area-occupied calculations for the unit to which they are organized. The unique operator-assigned designation for each division/brigade asset provides each division/brigade asset with a line organization.

Battalion format assignments will supercede division/brigade asset assignments when a format is assigned at the battalion level.

Perform a pen down on the **UNIT SYMBOL** button (Figure 3.2-A,(1)). The unit symbol box on the display will be highlighted.

Perform a pen down on each of the format buttons (Figure 3.2-A, (1-4)) and check the display to verify that the appropriate box is highlighted on the monitor.

The activation of a format button (eg., UNIT SYMBOL) must be accompanied by an assignment of tactical symbology to an echelon (for example, the battalion) in order for the format selected to be generated on the display map.

Reactivate the **UNIT SYMBOL** button (1) and perform a pen down on the **BN** button (5). A "U" will appear in the corresponding "Bn" box on the display monitor.

You have just assigned a battalion to appear in its entirety on the map display as a single unit symbol with the battalion's center of mass (COM) located at the UTM coordinates of the lower left corner of the symbol.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format - Continued

3.2.1 Battalion Level Display

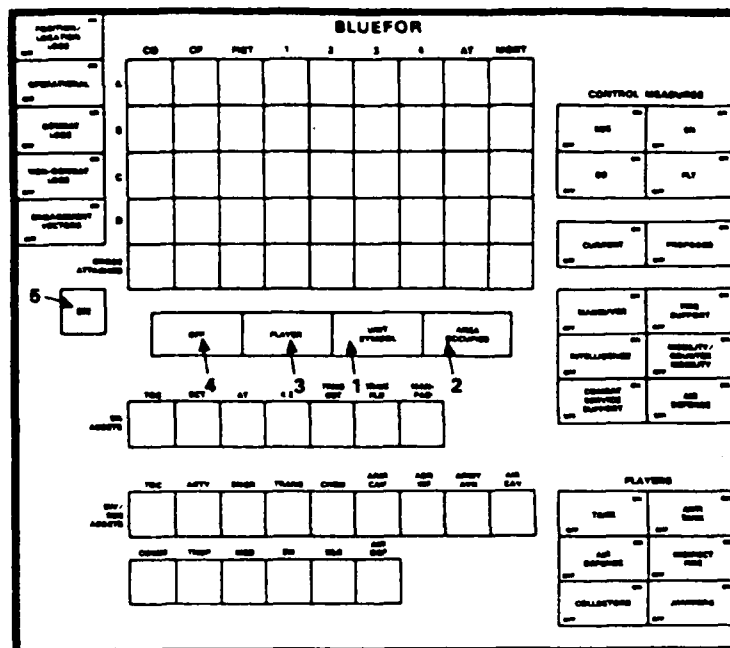


Figure 3.2-A. Display Format Buttons.

Under normal station operating conditions, you would return the display monitor to the background map of your choice to verify your assignment of tactical symbology or to monitor the selected echelon(s) by doing a pen down on the **DISPLAY MAP** button. (In fact, symbology assignments can be made from the Master Menu buttons on the graphics tablet with the map rather than the Master Menu displayed.) However, since this manual will be utilized as time is available, the operating mode of the system during the time period that you are performing these exercises may not allow you to see the results of your format and echelon assignments on the display as you actually make the symbology assignments. If you have not successfully activated a history segment for replay, you can see the results of each assignment of symbology in the figure which accompanies each exercise and shows the assignment of format and echelon as it would appear on the CCM map during an actual exercise.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format - Continued

3.2.1 Battalion Level Display

If you have selected a history segment for replay, you can see the results of your selections by doing a pen down on the **DISPLAY MAP** button and locating the battalion on the map. The easiest way to locate the battalion is to set the map scale to 1:500 and center the cursor over the echelon symbol(s) that you have just selected to be displayed. You can then change the map scale and map background as you desire. In order to identify the coordinates at COM, activate the cursor and position it at the lower left hand corner of the unit symbol on the map; the coordinates will be displayed as UTM coordinate values in the left-hand margin of the display.

Figure 3.2-B shows an armor battalion displayed on the CCM map as a unit symbol.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format - Continued

3.2.1 Battalion Level Display

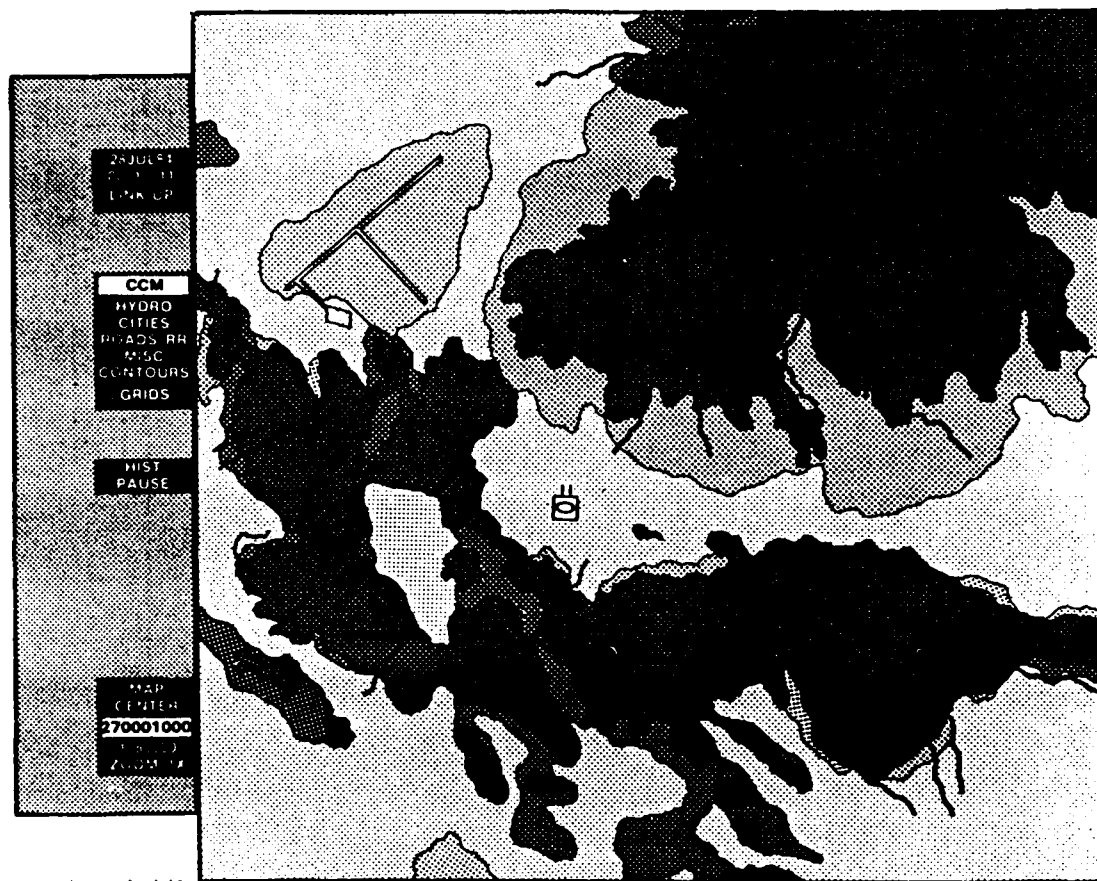


Figure 3.2-B. CCM Map with Armor Battalion Unit Symbol Displayed.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format - Continued

3.2.2 Company and Company-Component Level Display

You also have the capability to individually control the display of the tactical symbology for each of the companies and/or company-components in the battalion.

Display control on the company level is similar to battalion level display in that each company (companies A-D and the cross-attached company) can be represented as a unit symbol which will be located at the company's COM.

Company component level display (i.e., CP, FIST, platoons 1-4, anti-tank platoon, and/or mortar platoon) allows each component of each company to be displayed as a unit symbol which will be located at the component's COM.

Perform a pen down on the **OFF** button and then on the **BN** button to turn off the battalion level display. *Display control at the company level and/or the company-component level is disabled when the battalion level display is activated.*

Reactivate the **UNIT SYMBOL** button and perform a pen down on the following (see Figure 3.2-C):

- **A CO** button (1),
- **BI** button (2),
- **B MORT** button (3),
- **C CO** button (4), and
- **DI** button (5).

A "U" will appear in each of the corresponding boxes on the display.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format - Continued

3.2.2 Company and Company-Component Level Display

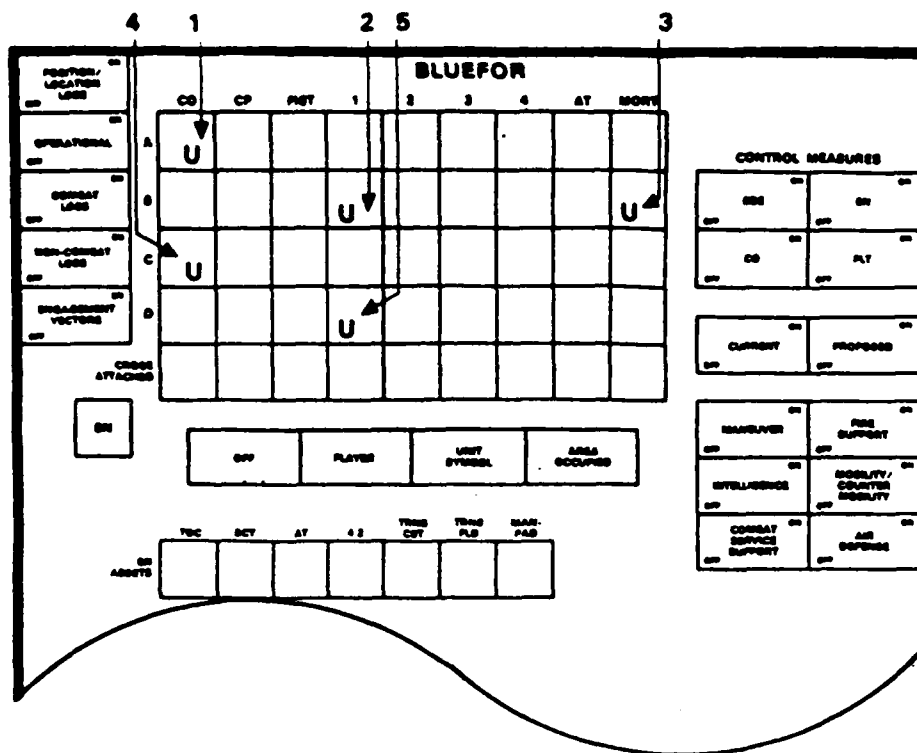


Figure 3.2-C. BLUEFOR Matrix with Company Level Display Activated.

You have just designated A Company in its entirety, B Company's 1st platoon, B Company's Mortar platoon, C Company in its entirety, and D Company's 1st platoon to be displayed as separate unit symbols on the map. Figure 3.2-D shows two companies and three platoons displayed as unit symbols on the CCM map. The COM of each company and company component selected is located at the UTM coordinates of the lower left corner of each symbol.

Figure 3.2-D shows two companies and three platoons displayed as unit symbols on the CCM map.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.2: Unit Symbol (FM 21-30) Format - Continued

3.2.2 Company and Company-Component Level Display

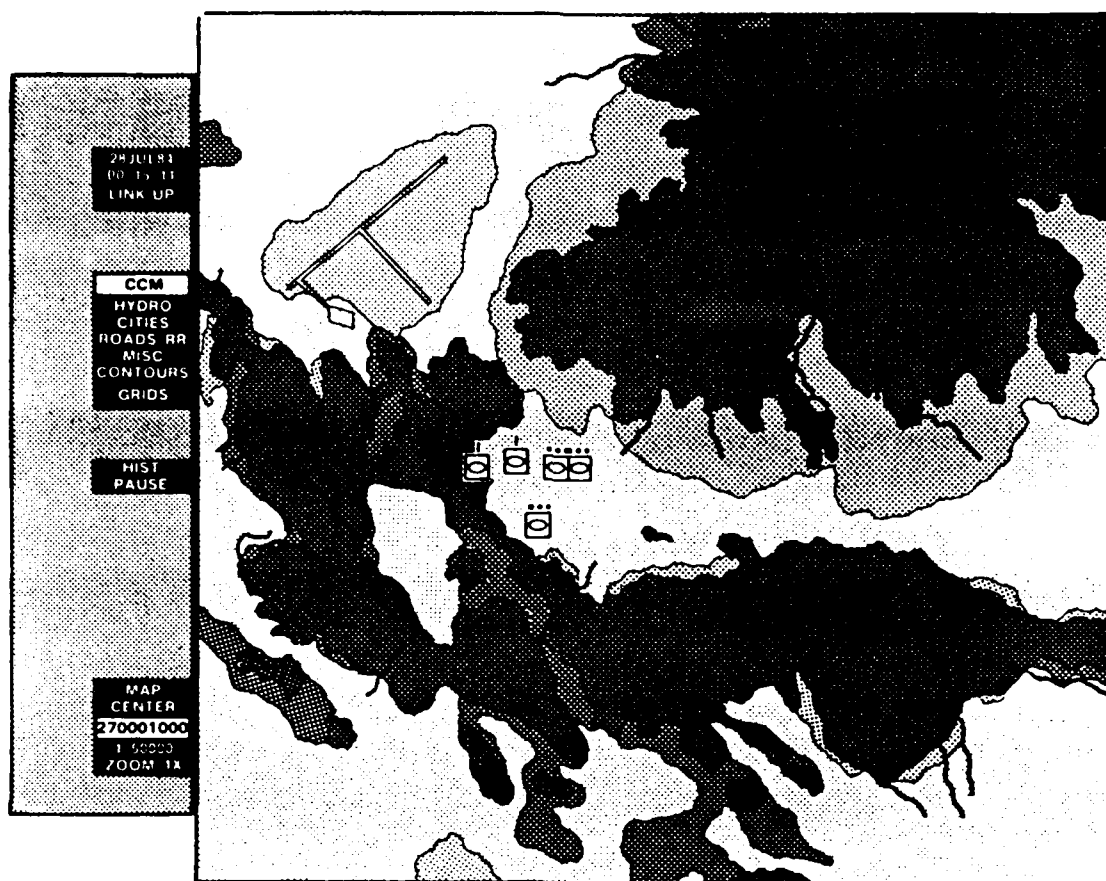


Figure 3.2-D. Company and Platoon Unit Symbols.

The display of cross-attached companies and components is controlled in the same manner as the display of companies 1-4. However, in order to display the weapon platoon of a cross-attached company, it is necessary to place the format desired (for example, "U") in both the **CROSS-ATTACHED AT** and **MORT** boxes. This is because when the cross-attached company was created during the computerization of players (i.e., initialization), the AT players in the platoon were created separately from the MORT players in the same platoon.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.3: Area-Occupied Format

3.3.1 Battalion Level Display

If you choose to display a battalion in an area-occupied format, it will be enclosed by a series of lines which form a boxlike figure around the battalion on the map. Area-occupied calculations and the resulting figure which encloses the battalion are based upon computer calculated COM.

Perform a pen down on the **AREA OCCUPIED** button. Perform a pen down on the **BN** button. An "A" will appear in the corresponding "Bn" box on the display monitor.

The company and company-component level selections which currently appear on the menu will remain (see Figure 3.3-A). However, the selection of the battalion level display has disabled the display selections at the lower echelons.

BLUEFOR										
POSITION/ LOCATION LOSS		CO	CP	PST	1	2	3	4	AT	MORT
OPERATIONAL	A	U								
COMBAT LOSS	B				U					U
NON-COMBAT LOSS	C	U								
ENGAGEMENT VECTORS	D				U					
CROSS ATTACKS										

<div style="display: flex; justify-content: space-around;"> OFF PLAYER UNIT SYMBOL AREA OCCUPIED </div>			
---	--	--	--

CONTROL MEASURES	
SOE	BN
CO	PLT
CURRENT	PROPOSED
MANEUVER	FIRE SUPPORT
INTELLIGENCE	MOBILITY/ COUNTER MOBILITY
COMBAT SERVICE SUPPORT	AIR DEFENSE

Figure 3.3-A. BLUEFOR Matrix with Company and Component Level Unit and Battalion Level Area-Occupied Selections.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.3: Area-Occupied Format - Continued

3.3.1 Battalion Level Display

Figure 3.3-B shows the results of the previous format assignment (i.e., a battalion displayed on the CCM map in an area-occupied format).

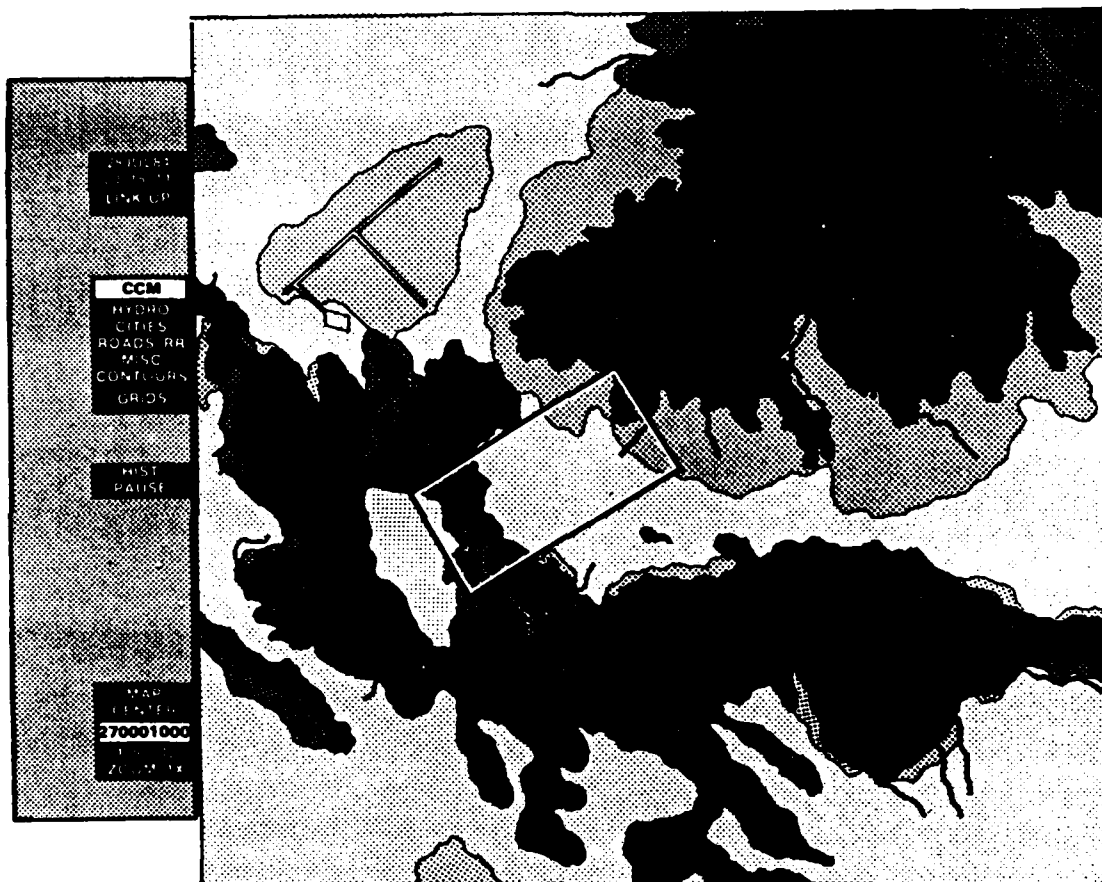


Figure 3.3-B. Battalion in Area-Occupied Format.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.3: Area-Occupied Format - Continued

3.3.2 Company and Company-Component Level Display

With the **AREA-OCCUPIED** button still activated, perform a pen down on the following:

- **A CO** button,
- **B CO** button,
- **C CO** button, and
- **D CO** button.

An "A" will appear in each of the corresponding boxes on the display. The battalion and company-component selections made previously will remain on the menu (see Figure 3.3-C).

In order to enable the company level display you have just assigned, you must perform a pen down on the **OFF** button and then on the **BN** button to deactivate the battalion level display. *If you do not turn off the BN button, the battalion level format assignment will supercede the company level area-occupied format.*

The company-component level assignments remaining on the menu are currently disabled due to the assignment of a format at a higher echelon (i.e., company level) and so, will not appear on the display.

BLUEFOR									
	CO	CP	PST	1	2	3	4	AT	MORT
A	A								
B	A			U					U
C	A								
D	A			U					

POSITION LOCATION LOSS

OPERATIONAL

COMBAT LOSS

NON-COMBAT LOSS

ENGAGEMENT VECTORS

CHOOSE ATTACHMENT

ON

OFF **PLAYER** **UNIT SYMBOL** **AREA OCCUPIED**

CONTROL MEASURES

USE **ON**

GO **PLT**

CURRENT **PROPOSED**

MANEUVER **FIRE SUPPORT**

INTELLIGENCE **MOBILITY/COUNTER MOBILITY**

COMBAT SERVICE SUPPORT **ASST SUPPORT**

TIME **SEC** **AT** **4.3** **TIME** **TIME** **TIME**

ADJUST **ADJUST** **ADJUST** **ADJUST** **ADJUST** **ADJUST** **ADJUST**

Figure 3.3-C. BLUEFOR Matrix with Company Level Area-Occupied Format Selections.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.3: Area-Occupied Format - Continued

3.3.2 Company and Company-Component Level Display

Figure 3.3-D shows the current format assignments as they would be displayed on the CCM map. The COM of each company has been calculated and the lines that enclose the companies in the area-occupied are based on each company's COM.

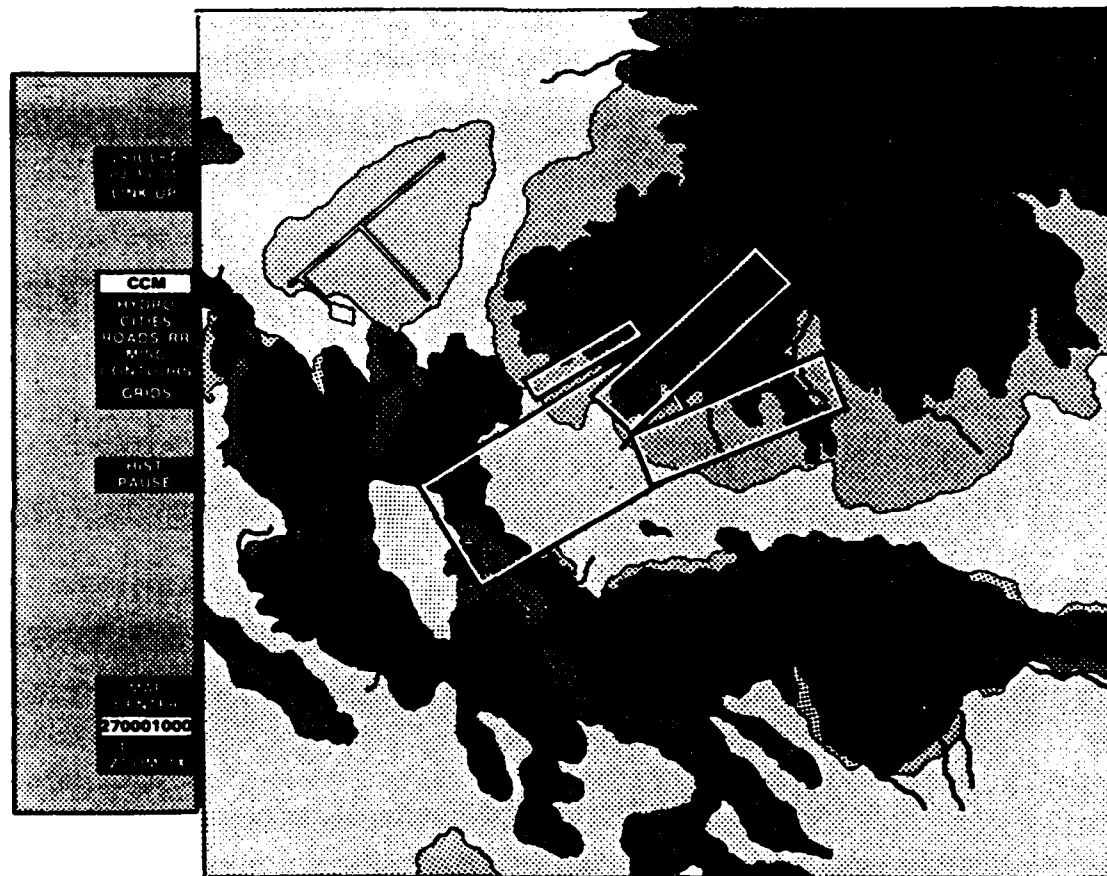



































Figure 3.3-D. Four Companies Displayed in Area-Occupied Format.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.4: Individual Player Format

If a unit is displayed in individual player format, all vehicles and weapons linked to the unit will be represented by individual symbols on the display (see Table 3.2). COM calculations do not occur when units are displayed in the individual player format.

TABLE 3.2

	TANK		105 MM HOWITZER		HELICOPTER
	APC BMP BRDM		8" HOWITZER		FIGHTER
	TRUCK		175 MM GUN/HOWITZER		BOMBER
	TOW SAGGER		MANPAD SA7		FIGHTER/BOMBER
	DRAGON		VULCAN SA9		RECONNAISSANCE
	VIPER LAW RPG		DIVAD ZSU ADA		A-STATION
	81 MM MORTAR		MANPACK		FIELD VIDEO
	107 MM MORTAR (4.2)		RADAR		FIELD CONTROLLER
	120 MM MORTAR		JAMMER		FIRE MARKER
	180 MM MORTAR		COLLECTOR		
	155 MM HOWITZER				
	152 MM HOWITZER				
	122 MM HOWITZER				
	152 MM GUN/HOWITZER				

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.4: Individual Player Format - Continued

3.4.1 Making the Players Operational

The following buttons facilitate the display of individual player symbology (see Figure 3.4-A):

- **OPERATIONAL** (2)
- **COMBAT LOSS** (3)
- **NON COMBAT LOSS** (4)
- **POSITION/LOCATION** (1)
- **ENGAGEMENT VECTORS** (5)
- **DESIGNATORS** (Master Menu 2)

When the **OPERATIONAL** button (2) is "On" and the individual player format has been selected for display, operational (instrumented) players appear on the background map as the specific symbols depicted in Table 3.2. When the **OPERATIONAL** and **DESIGNATORS** (Master Menu 2) buttons are both "On", the player symbols for operational players and their associated designators (i.e., individual ID numbers assigned to each player) will appear on the background map.

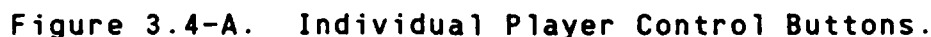
When the **COMBAT LOSS** button (3) is "On" and the individual player format has been selected, all players "killed" as a result of combat (and those uninstrumented players combat killed through the use of the Player Kill menu) will appear as backlit player symbols in black.

With the **NON-COMBAT LOSS** button (4) "On" and the individual player format has been selected for display, all instrumented players "killed" through the Player Kill menu and those uninstrumented players killed administratively will appear as backlit player symbols in gray.

The display of instrumented players on whom position/location (P/L) information is lost is controlled through the **POSITION/LOCATION LOSS** button (1). When the button is in the "Off" position, symbols of those players with current position/location information are displayed as determined by the "On-Off" condition of the **OPERATIONAL** (2), **COMBAT LOSS** (3), and **NON-COMBAT LOSS** (4) buttons.

Display of engagement vectors on the background map is controlled by the **ENGAGEMENT VECTORS** button (5). When the button is in the "On" position, BLUEFOR engagement vectors are displayed in blue.

3.4.1 Making the Players Operational



3-22

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.4: Individual Player Format - Continued

3.4.2 Battalion Level Display

Turn on the **POSITION/LOCATION**, **OPERATIONAL**, and **COMBAT LOSS** buttons.

Perform a pen down on the **PLAYER** button and then do a pen down on the **BN** button.

You have just designated a battalion to appear on the map display as individual players. All battalion players will appear as individual symbols (see Table 3.2, page 3-15) regardless of company or company-component affiliation.

Figure 3.4-B shows a battalion displayed on the CCM map in the player format. Combat losses are backlit in black (1) and players on whom P/L information has been lost are highlighted in white at their last recorded locations (2). You should examine the figure until you are familiar with the various symbols used to represent the different types of players (eg., tanks (3) and APCs (4)).

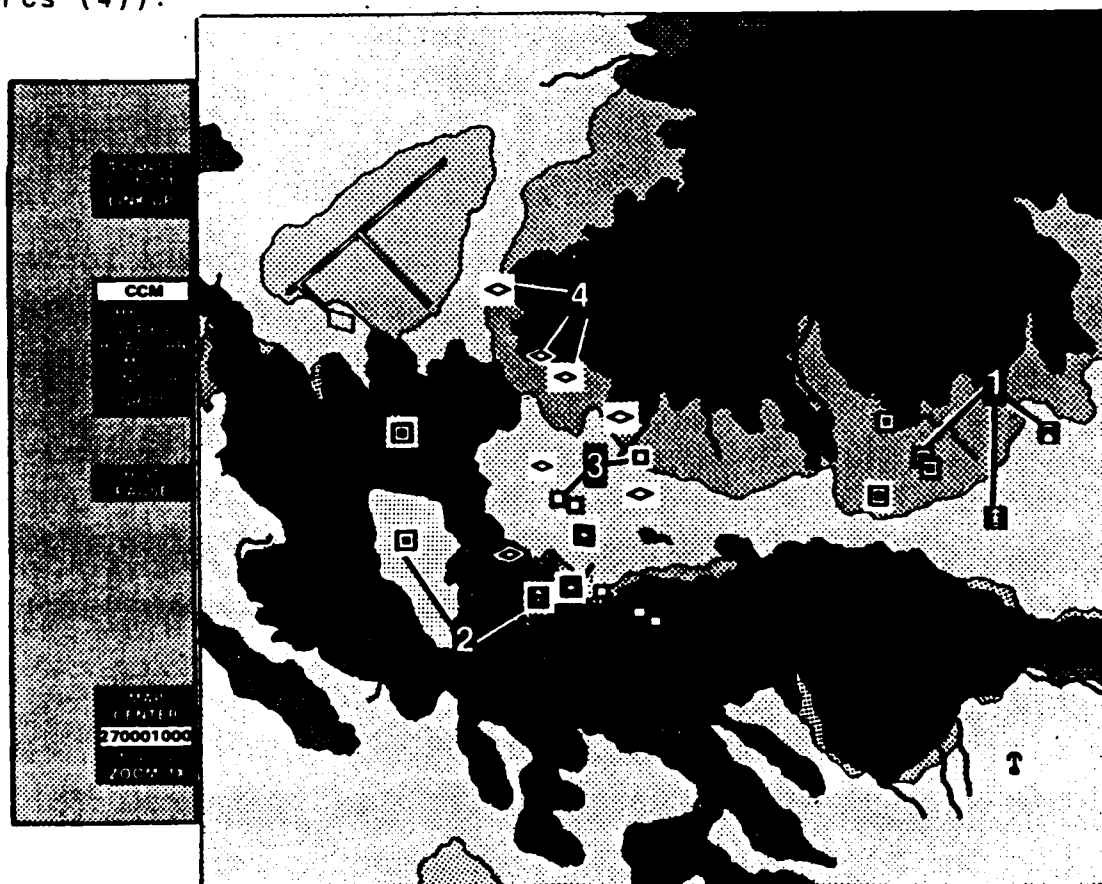


Figure 3.4-B. Battalion Displayed in Player Format.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.4: Individual Player Format - Continued

3.4.3 Company and Company-Component Level Display

Player format may also be assigned to individual companies and/or company components by performing a pen down on the **PLAYER** button and then doing a pen down in the appropriate box in the BLUEFOR matrix. Battalion level assignments must be turned off in order to select companies or their components for individual display of players and company level assignments must be turned off to display company-components as individual players.

Exercise 3.5: Mixed Formats

The previous exercises demonstrated the use of each of the three tactical symbology formats separately. Routine use of the DeAnza will require you to mix the formats on the player menus. For example, you may be required to monitor one company in an area-occupied format and another company in individual player format. The following exercises demonstrate the selection of tactical symbology in mixed formats.

If any of the boxes in the BLUEFOR matrix display a "U," an "A," or a "P," perform a pen down on the **OFF** button and turn off all boxes in the matrix by doing a pen down on any box that displays a letter until there are no format assignments left on the menu.

Although you have just turned off all previous format assignments, you should note that it is not necessary to utilize the **OFF** button to change the format of a box; the format assignments were turned off simply to clear the screen for the next exercise. You need to use the **OFF** button only when you want to disable one echelon in favor of another (eg., turn off **BN** to display Company) or if you no longer wish to display an assigned format at a particular echelon. Changes in format assignment can be made without utilizing the **Off** button prior to making the assignment. For example, if there is a "U" in the BN box and you want to change the format from "unit symbol" to "player" ("P"), do a pen down on **PLAYER** and then do a pen down on the **Bn** button. The format in the "Bn" box will change from "U" to "P" and the new format will appear on the display map.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.5: Mixed Formats - Continued

Perform a pen down on the **UNIT SYMBOL** button; then do a pen down on the **A CO** button. Next perform a pen down on the **PLAYER** button and then do a pen down on the **B1**, **B2**, and **C CO** buttons. Finally, perform a pen down on the **AREA-OCCUPIED** button and select **B MORT** and **D CO** for display in area-occupied format.

The display on the graphics monitor at this time consists of the following tactical symbology:

- A Company as a unit symbol (1),
- B Company, 1st Platoon as player symbols (2),
- B Company, 2nd Platoon as player symbols (3),
- B Company, Mortar Platoon in an area-occupied format (4),
- C Company as individual player symbols (5), and
- D Company, in an area-occupied format (6).

Figure 3.5-A shows the current BLUEFOR matrix with the selected player display formats. There is no conflict between echelons in the selections that have been made thus far and all assignments will appear on the map.

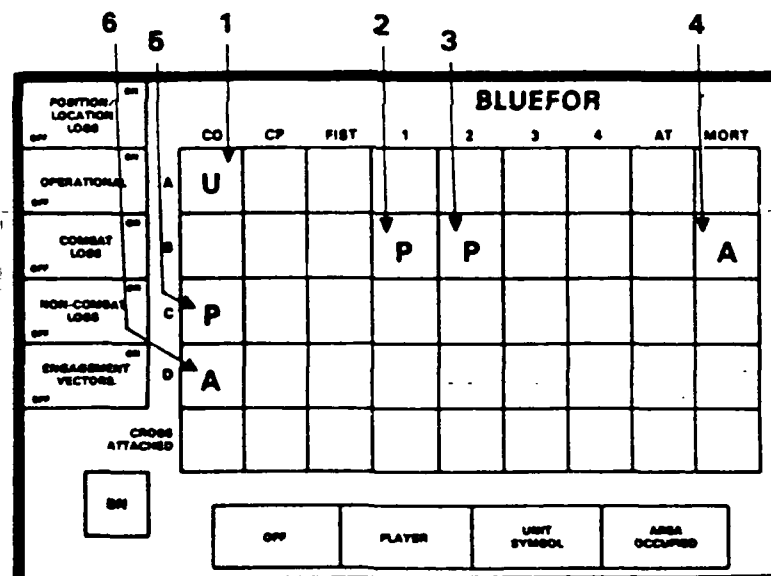


Figure 3.5-A. BLUEFOR Matrix with Mixed Format Assignments.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.5: Mixed Formats - Continued

Figure 3.5-B shows the CCM map with the current format assignments.

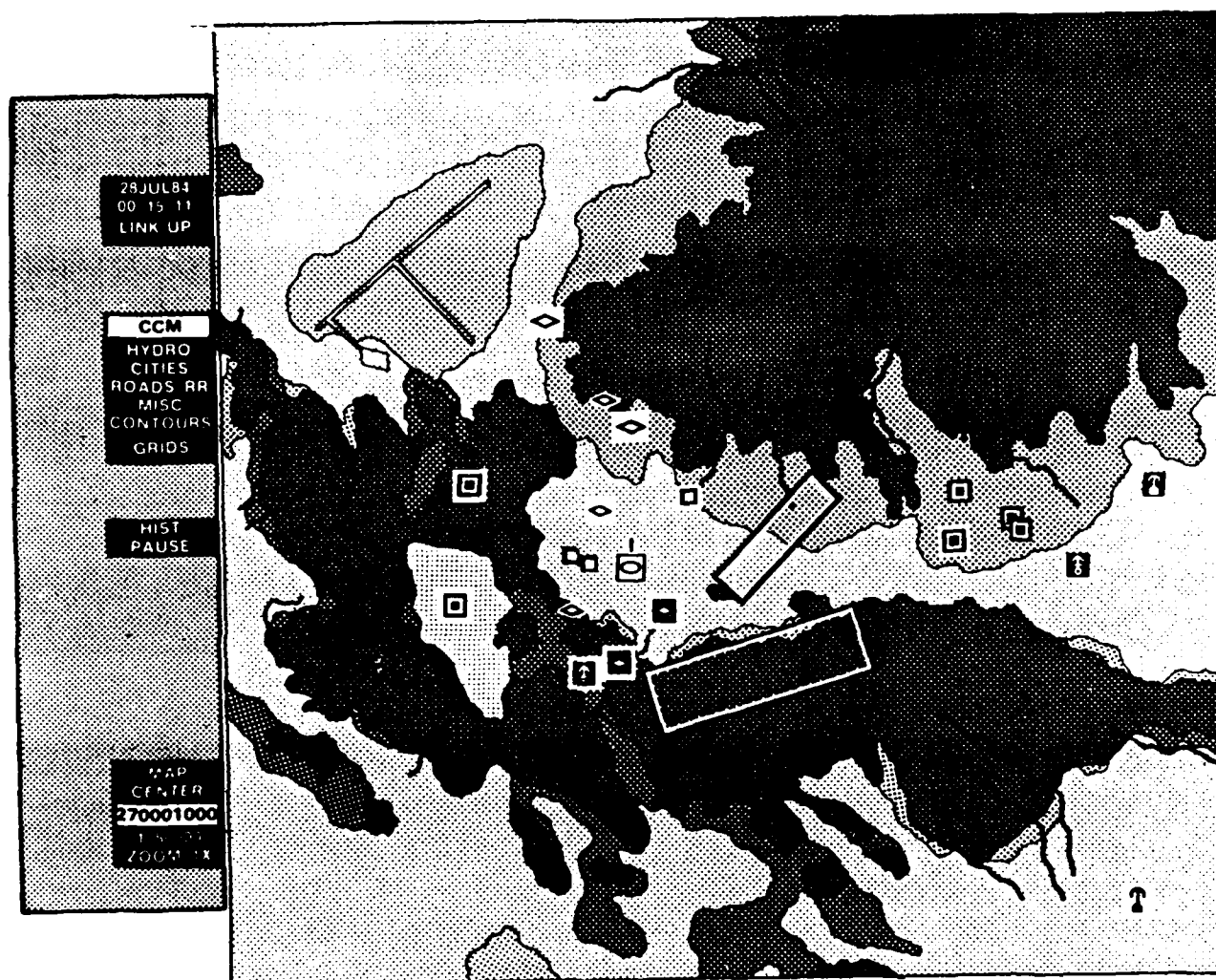


Figure 3.5-B. Battalion Displayed in Mixed Format.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.5: Mixed Formats - Continued

Perform a pen down on the **UNIT SYMBOL** button and then do a pen down on the **BN** button. A "U" will appear on the display in the "Bn" box; all other boxes will remain unchanged. However, although the boxes on the display still show all selections you have made thus far, you have just disabled all company and company-component level selections.

Turn off the **BN** selection by performing a pen down on the **OFF** button and then doing a pen down on the **BN** button. Company and company-component level displays are now re-activated.

Perform a pen down on the **UNIT SYMBOL** button and then do a pen down on the **B CO** button. A "U" will appear in the "B Co" box on the display; all other boxes on the display will remain unchanged. The activation of tactical symbology (i.e., the unit symbol) at the company level has disabled the player and area-occupied symbols previously selected for B Company at the company-component level. Even though the boxes in the matrix on the display still show B Company with player format for the 1st and 2nd platoons and area-occupied format for the mortar platoon, the symbol at the company level takes precedence.

Note: *Display control at the company component level is disabled when the company that the components belong to is displayed at the company level -- in any format -- or when the display is activated at the battalion level -- in any format.*

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.5: Mixed Formats - Continued

Perform a pen down on the **PLAYER** button and then do a pen down on the **B CO** and **D CO** buttons. A "P" will appear in the "B Co" and "D Co" boxes on the display. Once again, the activation of tactical symbology (in this case, individual player symbols) at the company supercedes the previous selections at the company-component level. The company-component level selections will continue to appear on the menu but the selection of a company level display format has disabled the component level selections.

Tactical symbology formats placed in a higher echelon (eg., company) take precedence over formats assigned at a lower echelon (eg., platoon). The battalion level format takes precedence over the company level format which takes precedence over the platoon level format and so forth.

Exercise 3.6: Task- Verses Line-Organized Display

The previous exercises have demonstrated the display of tactical symbology when the task organization paralleled the line organization. When task organization differs from line organization, the display of tactical symbology will also differ.

For example, assume that the 3rd platoon of B company (3/B) has been task-organized to C Company. When you assign a symbology format to B Company (eg., "player"), the display on the map will show all players linked to B Company except those players in 3/B. If you assigned the "area-occupied" format or the "unit symbol" format to B Company, the resulting displays would be drawn based upon COM calculations which did not include 3/B.

On the other hand, if you assigned the "player" format to C Company, the display on the map would show all players linked to C Company plus 3/B which has been task-organized to C Company. If you assigned the "area-occupied" or "unit symbol" formats to C Company, the resulting figure on the map display would be drawn based upon COM calculations which encompassed all of C Company and 3/B.

Echelon precedence for 3/B will now occur when C Company level display is assigned. That is to say, assignment of format at the company level will only affect the display of 3/B as a company-component display when C Company has been assigned a format.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.6: Task- Verses Line-Organized Display - Continued

The unit designators (**DESIGNATORS** button) that can be displayed with each unit symbol will always represent the unit's line organization. In the case of 3/B task-organized to C Company, the unit designator for 3/B will still show the line organization: 3/B.

The company team and battalion task force symbols are placed over the echelon marking of a unit to indicate a grouping of the unit for a specific tactical operation in which the denoted unit functions as the command or controlling element. Whenever one or more unit symbol type is selected for the units attached to a battalion, the task force symbol is placed on the battalion's unit symbol. Whenever more than one unit symbol is selected for the unit's association with a company, the company team symbol is placed on the company's unit symbol (see Table 3.1, p. 3-8).

For example, if the battalion under training is mechanized infantry, the unit symbol for that battalion will be the "mechanized infantry" symbol. If the battalion has A Company cross-attached and A Company is "armor," a task force symbol is placed over the unit symbol for the battalion.

On the company level, if B Company is an armor unit, the unit symbol for 1/B is "armor." However, if 1/A is task-organized to B Company and 1/A is an infantry platoon, the company team symbol is placed over the unit symbol for B Company.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.7: Player Types

Master Menu buttons also allow you to turn on all tanks, anti-tank weapons, air defense, indirect fire weapons, collectors, and/or jammers without regard to the display selection of the units to which the affected players are organized. When the associated player control buttons (see Figure 3.7-A) are in the "Off" position, players are displayed based upon your display selection of the unit(s) to which players are organized. For example, if the AIR DEFENSE button is on, all air defense player types will be displayed regardless of whether the units to which they are attached have been selected for display. If the AIR DEFENSE button is off, air defense player types will only be displayed if the unit(s) to which they are attached has been selected for display.

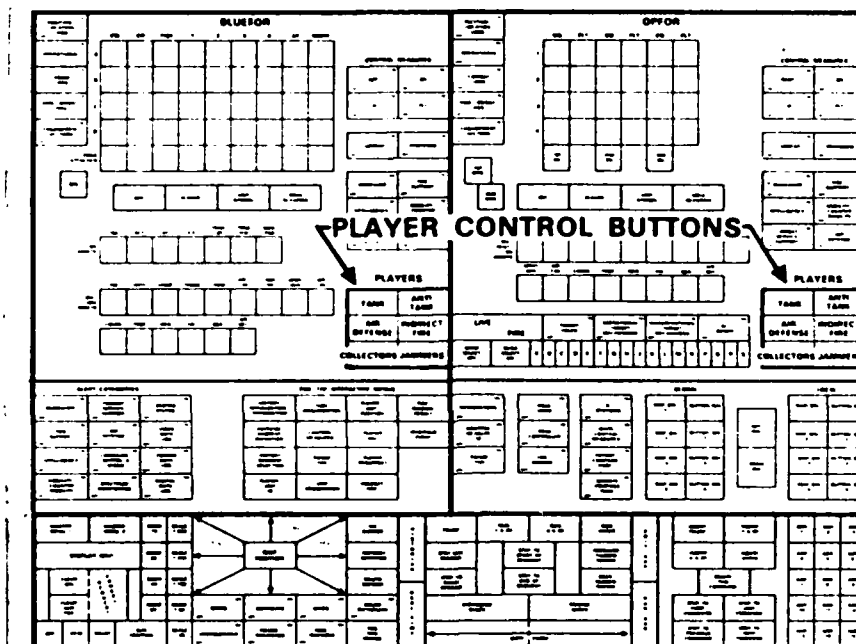


Figure 3.7-A. Controls for Display of Player Types

If you are in Historian mode and have a history segment available, practice turning these buttons off and on with the battalion displayed in order to become familiar with the symbols which represent the different player types. Table 3.3 shows the BLUEFOR and OPFOR player types that are affected by the player control buttons.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS**Exercise 3.7: Player Types**

Table 3.3

Player Types Affected by the Player Control Buttons

Button	BLUEFOR Player Type	OPFOR Player Type
TANKS	Tanks	Tanks
ANTITANK WEAPONS	APC w/TOWs MANPACK w/Dragons MANPACK w/Viper	BMP w/SAGGER BRDM w/SAGGER MANPACK w/SAGGER 122 MM SP Howitzer
AIR DEFENSE WEAPONS	Vulcan MANPAD DIVAD	ZSU23-4 ADA SA-9 MANPACK w/SA-7
INDIRECT FIRE WEAPONS	107 MM Mortar 81 MM Mortar 175 MM SP Gun 105 MM SP Howitzer 155 MM SP Howitzer 8" SP Howitzer	122 MM SP Howitzer 152 MM Gun Howitzer 152 MM Howitzer 120 MM Mortar 180 MM Mortar
COLLECTORS	Radar Collectors	Collectors
JAMMERS	Jammers	Jammers

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.8: Master Menu 2

As previously discussed, Master Menu 2 provides the capability to assign unit symbol, individual player, and area-occupied formats to OPFOR players. The assignment of format to the various OPFOR echelons is accomplished in exactly the same manner as for the BLUEFOR echelon assignments made using Master Menu 1. In addition to assignment of format to OPFOR players, player types, and engagement vectors, Master Menu 2 gives you the capability to control the display of:

- WHITE Team Players (Field Controllers and Fire Markers)
- Field Video Camera Locations
- A Stations
- Compass Roses for Tiefort and Granite Mountains
- Range Fans
- WHITE Control Measures
- Unique Control Measure Identifications (UCMIDs)
- OPFOR Control Measures
- Global and Local Map and Button Bins

3.8.1 White Team Players and Field Video Camera Locations (Figure 3.8-A)

The display of White (Controller) symbology is controlled through the use of the **FIELD VIDEO** (1), **FIELD CONTROLLER** (2), and **FIRE MARKER** (3) buttons. When these buttons are in the "On" position, White players are displayed in white on the background map. Field Controllers show up as a white box with a "C" in the center and fire markers are displayed as a white box with an "M" in the center. Field video camera locations are displayed as a white camera-like symbol. Table 3.2 on page 3-20 shows the symbols for video cameras, fire markers, and field controllers.

If you have a history segment available on the display, practice activating the **FIELD VIDEO**, **FIELD CONTROLLER**, and **FIRE MARKER** buttons in order to see the symbols represented on the map.

3.8.2 A Stations (Figure 3.8-A)

The display of A stations on the engagement simulation ranges is controlled by use of the **A STATIONS** (4) button. A stations are displayed in white as A-shaped antennae.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.8: Master Menu 2 - Continued

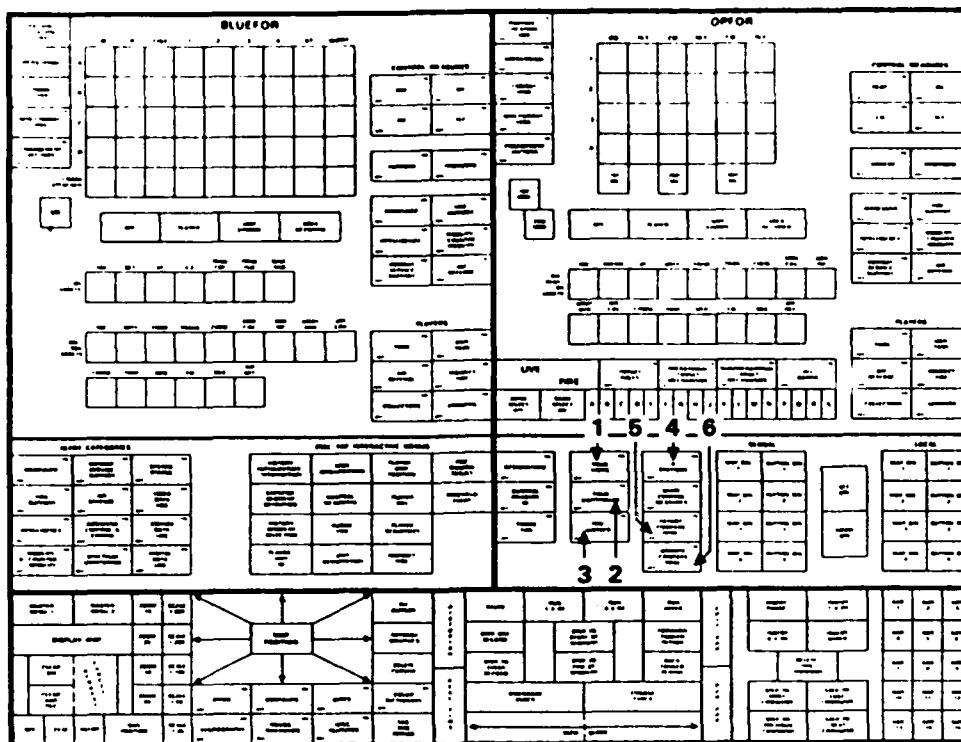


Figure 3.8-A. Display Controls on Master Menu 2.

3.8.3 Compass Rose (Figure 3.8-A)

The capability to display direction finding compass roses is provided through the **TIEFORT COMPASS ROSE** (5) and **GRANITE COMPASS ROSE** (6) buttons. The Tiefert Compass is centered on Tiefert Mountain and the Granite Compass is centered on Granite Mountain. Both compasses extend over the entire Ft. Irwin area when they are turned on. The angular resolution of the compasses is one degree with labels every 22.5 degrees.

If you have a history available on the display, activate each of the compass roses one at a time and then both together in order to become familiar with the symbology that represents the compass roses on the display.

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SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.8: Master Menu 2 - Continued

3.8.4 Range Fans

Range fans graphically display the maximum effective range of a selected weapon. The assignment of range fans is controlled through the use of the **RANGE FAN** button on the EMC/TAF Interactive Menu portion of the tablet. This interactive menu provides the capability for each station to independently construct range fans for up to fifty players. The definition of range fans is local. If you add, delete, or change range fans at one station it will have no effect on the range fans at any other station.

The following exercises will present examples of the construction, deletion, and display of BLUEFOR and OPFOR range fans. The exercises must be performed with an operational system (i.e., link is "Up") and should be completed in Historian mode if possible so as not to disrupt pre-rotation preparation or real time display.

Perform a pen down on the **RANGE FAN** button located on the EMC/TAF Interactive Menu portion of the graphics tablet. An interactive menu will appear on the display. This menu gives you the capability to add (i.e., construct) or delete a range fan. Follow the directions in the prompts that appear backlit in red the "Range Fan" box in the lower left-hand corner of the display. Selections on the interactive menu are made by performing a pen down on the area of the graphics tablet that corresponds to the placement of the cursor over the selected interactive menu option on the display.

Following the directions of the first prompt message, "Select Action," perform a pen down on the **ADD** option. The "Add/Delete" option box will disappear and be replaced with a new set of options and your previous selection. "Add," will now appear in the Range Fan box along with a new prompt message, "Select Force."

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.8: Master Menu 2 - Continued

3.8.4 Range Fans

Select BLUEFOR by performing a pen down over the **BLUEFOR** option. Displayed on the graphics monitor will be a new prompt, "Select Player Type," and a list of player types (i.e., equipment) of the force selected in the previous step. For example, the following list is generated by your selection of BLUEFOR as the force:

BLUEFOR	Range*
Tank Main Gun	2,000
TOW	3,500
Dragon	1,500
Viper	1,000
MANPAD	5,000
Vulcan	1,200
Radar	10,000
81 MM Mortar	4,595
107 MM Mortar	5,650
105 MM SP Howitzer	11,500
155 MM SP Howitzer	18,100
175 MM SP Gun	32,800
8" SP Howitzer	20,600

* **Maximum effective ranges are provided for your information only. They are not displayed in the player type option box.**

Select **TANK MAIN GUN**. A list of the IDs assigned to those BLUEFOR tanks for which range fans have not already been selected will be displayed on the graphics monitor along with the prompt message, "Select Player." Select the first player for whom you desire to construct a range fan by performing a pen down over the player's ID.

A new prompt, "Select Starting Point," and a compass will appear on the display. Place the cursor over the point on the compass at which you desire to establish the counter-clockwise limit and perform a pen down.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.8: Master Menu 2 - Continued

3.8.4 Range Fans

The new display on the monitor will include a prompt, "Select Ending Point," a compass, and the CCW point established in the previous step. Place the cursor over the point at which you desire to establish the clockwise limit and perform a pen down. The outer limits and direction of orientation for the range fan have now been established.

If, at any point in the selection process, you desire to cancel or change the force type, player ID, or CCW and/or CW compass points that you have entered, the **IGNORE** option will cancel the selection(s) and cause you to exit the interactive menu.

Displayed on the graphics monitor is the prompt, "Select Termination," and the options, **IGNORE**, **REPEAT**, and **DONE**.

Note: Ordinarily when a series of range fans are to be constructed for one force type (eg., **BLUEFOR**), the **REPEAT** option would be used to enable construction of an entire series of **BLUEFOR** range fans without exiting the menu. However, in order to maintain the integrity of the existing system (i.e., to avoid adding unwanted range fans or deleting existing range fans during a practice session), you will be instructed to use the **IGNORE** option after defining each individual range fan.

Select **IGNORE**.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.8: Master Menu 2 - Continued

3.8.4 Range Fans

During actual operation of the DeAnza you will often be required to enter more than one range fan for each type of force at a time. If you desire to immediately enter another range fan for a BLUEFOR player without cancelling the previous entry, you would use the **REPEAT** option which will return you to the "Select Player" prompt and the player ID list where you may begin entering another range fan.

When you have entered all desired range fans or wish to exit the interactive menu and store the range fans you have entered, use the **DONE** option to escape back to the map.

To summarize the **IGNORE**, **REPEAT**, and **DONE** options: **IGNORE** ignores the selection you have just made and exits the menu; **REPEAT** saves the selection you have just made and returns you to the "Select Player" prompt so that another range fan can be added; and **DONE** saves the selection you have just made and exits the menu.

If you desire to remove a range fan that has already been established, you must place the cursor over **DELETE** in the "Select Action" step. This selection will result in the generation of a list of players for whom range fans have been constructed. Select the player for whom a range fan is no longer to be displayed and perform a pen down over the player's ID. The resulting prompt message, "Select Termination," will be accompanied by the **IGNORE**, **REPEAT**, and **DONE** options. **IGNORE** will cancel your deletion and return you to the map. **REPEAT** will delete your selection and generate the player ID list for another selection. **DONE** will delete your selection and exit the menu.

The **RANGE FAN** button located on the lower left-hand portion of Master Menu 2 controls the display of the range fans constructed through the interactive menu. In order to display the range fans that have been constructed for a player or players, the players' tactical symbology must be displayed in the individual player format.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.8: Master Menu 2 - Continued

The construction of White and OPFOR control measures and the display of established control measures and Unique Control Measures Identifications (UCMIDs) are discussed in detail in Section 4 of this manual.

The use of global and local map and button bins is discussed in detail in Section 5 of this manual.

Exercise 3.9: Live Fire Display

The DeAnza also provides the capability to monitor the task force during fire control exercises which take place in the live fire area. However, before addressing the buttons associated with the display of live fire exercises, some discussion of operations in the live fire area is necessary.

Live fire operations has the capability to simulate the movement of OPFOR troops in the live fire area by alternately raising and lowering a series of plywood targets which represent one or more weapons of a single type (eg., BMP, BRDM, tank). Targets are accurate silhouettes of the weapons systems which would be present in an OPFOR Motorized Rifle Regiment (MRR) and are used to simulate an MRR.

The targets simulate OPFOR movement to attack by raising and lowering in a series of specified bands. These bands are swathes of targets which are scattered near a defined distance from the BLUEFOR central company defensive position. For example, the defined distance of Sierra band targets is 9500 meters from the central company position and the defined distance of the Alpha band is 500 meters from the central company position. However, few of the individual targets in any band are precisely located at the defined band distance (eg., 9500 meters) because the targets are scattered.

Generally, each target is related to a target in another band. For instance, in the Sierra band there is a target hole designated "SB06". The "S" is the band designator and the "B06" is a target hole identifier. The target hole "SB06" is fitted with a silhouette of a BMP. In the Romeo band, a related target hole is designated "RB06." This target hole is also fitted with a

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.9: Live Fire Display - Continued

BMP silhouette. In fact, from the first point at which a target with a certain designator appears (eg., "SB06"), related targets are present in subsequent bands through the Alpha band. In this instance, a BMP silhouette with the "B06" designator is present in all of the bands from Sierra to Alpha and the "B06" target in each band represents the same OPFOR weapons system.

Due to the special circumstances of Live Fire Operations, there are two different ways to display OPFOR player/target activities. The OPFOR may be displayed in Target State as physical components (i.e., targets) only or the OPFOR may be displayed in the Tactical State which simulates the position OPFOR players would occupy if real players were on the field (i.e., simulates OPFOR movement).

3.9.1 Target State

Target State represents a realistic view of the state of the physical components of the Live Fire area. Target State is activated by performing a pen down on the "On" portion of the **LIVE FIRE TARGET STATUS** button on the Alert Categories Menu. When Target State is activated you to have the capability to display:

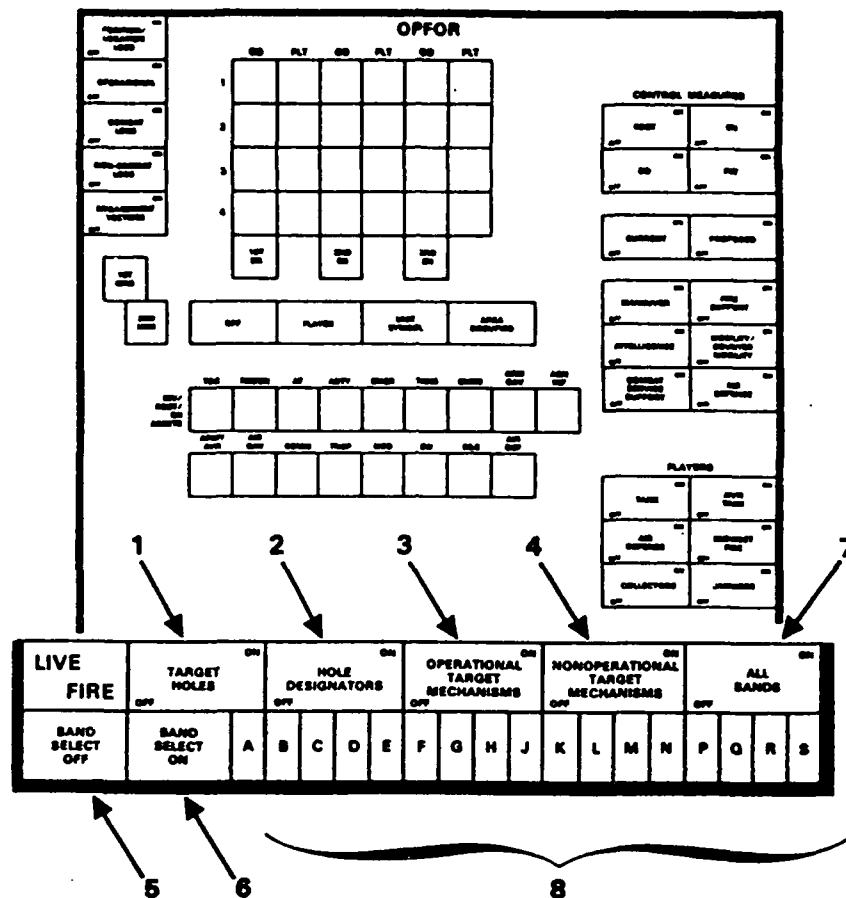
- the location of each target hole
- the ID of each target hole
- whether or not the target hole is occupied by a target
- what type of weapons system the target hole represents
- the status of the target

When Target State is activated, twenty-four (24) buttons are available to control the display of the Live Fire area (see Figure 3.9-A). These buttons are the **TARGET HOLES** button (1), **HOLE DESIGNATORS** (2), **OPERATIONAL TARGET MECHANISMS** (3), **NONOPERATIONAL TARGET MECHANISMS** (4), the **BAND SELECT OFF** (5) and **BAND SELECT ON** (6) buttons, the **ALL BANDS** (7) button, and the seventeen (17) buttons bearing designations "A" through "S" (8) which provide display of individual targets.

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.9: Live Fire Display - Continued

3.9.1 Target State Display



3.9-A. Live Fire Display Buttons.

The **TARGET HOLES** button controls the display of the location of each target hole regardless of whether or not it is occupied by a target silhouette. The **HOLE DESIGNATORS** button enables the display of a three-character target ID (eg., "B06") which identifies the particular weapons system. The **OPERATIONAL TARGET**

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.9: Live Fire Display - Continued

3.9.1 Target State Display

MECHANISMS button controls the display of all holes which are occupied by an operational target silhouette and displays the appropriate player symbologies at the target hole sites (see Table 3.2, p. 3-20). In the same way, the **NONOPERATIONAL TARGET MECHANISMS** button controls the display of each target hole which is occupied by a nonoperational target silhouette. All occupied target holes may be displayed by turning on the **OPERATIONAL-** and **NONOPERATIONAL TARGET MECHANISMS** buttons at the same time.

When the **ALL BANDS** button is activated, all of the seventeen target bands will be displayed (in accordance with your selection of any or all of the **TARGET HOLES**, **OPERATIONAL-**, and **NONOPERATIONAL TARGET MECHANISMS** buttons). For example, if you activate the **ALL BANDS**, **TARGET HOLES** and **OPERATIONAL MECHANISMS** buttons, the display will show all target holes which contain operational targets. Nonoperational targets will not be displayed.

When the **ALL BANDS** button is deactivated, only those bands activated individually will appear on the screen (in accordance with your selection of any or all of the **TARGET HOLES**, **OPERATIONAL MECHANISMS**, and **NONOPERATIONAL MECHANISMS** buttons). For instance, if you wish to display only those operational target silhouettes in bands "S," "R," and "Q," you must activate Target Status by performing a pen down on the **LIVE FIRE TARGET STATUS** button and then:

- 1) activate the **OPERATIONAL MECHANISMS** button,
- 2) deactivate (i.e., turn off) the **ALL BANDS** button,
- 3) activate the **BAND SELECT ON** button, and finally,
- 4) activate the "S," "R," and "Q" buttons.

The **BAND SELECT OFF** and **BAND SELECT ON** buttons provide the capability to select any or all of the 17 individual bands for display. Although individual bands may be displayed in any combination, they are usually displayed two or three at a time and in sequence (eg., "S," "R," and "Q"). This allows you to monitor

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.9: Live Fire Display - Continued

3.9.1 Target State Display

the effectiveness of BLUEFOR fire control. Individual bands are activated by performing a pen down on the **BAND SELECT ON** button and then performing a pen down on the desired individual band button (see example above). Individual bands are deactivated by performing a pen down first on the **BAND SELECT OFF** button and then on the desired band button(s).

Any time the **OPERATIONAL TARGET MECHANISMS** button is activated, a visual indication of "Up/Down" and firing status is provided. An enhanced player symbol (see Table 3.2, p. 3-20) represents a target which is up and vectors oriented in accordance with the stored azimuth of the target are displayed to indicate target firings (vectors appear on the display as a chartreuse line). The displayed symbols for both operational and nonoperational target mechanisms are the same as the weapons systems symbols and are black.

3.9.2 Tactical State Display

Tactical State display is activated by performing a pen down on the "On" portion of the **LIVE FIRE ENGAGEMENTS** button which is located on the Alert Categories Menu. Tactical State represents a simulated view of the position which the OPFOR MRR silhouette players would occupy if real players were on the field. It simulates the movement of OPFOR troops through computer-generated paths which conform to the operator-defined speed, path, and organization of the chosen scenario.

Each target -- depending on the definition of the scenario -- represents one or more weapons systems of the same type. Each weapons system will be displayed on the screen and, therefore, more weapons symbols may appear on the screen than there are actual targets. Player symbols and colors identical to those used during engagement simulation exercises represent each weapons system. BLUEFOR players are represented in blue and OPFOR players in red and players may be represented in unit symbol, area-occupied, or player format.

When an OPFOR target receives a catastrophic kill, the appropriate silhouette player symbol is black shrouded and simulated movement ends at the point at which the weapons system would have been killed if the target had been moving at the defined rate. The same process is followed for mobility kills as for catastrophic kills except that associated shrouds are dark gray. Since mobility kills are a subset of combat kills, the display

SECTION 3: UNIT/PLAYER DISPLAY FORMATS

Exercise 3.9: Live Fire Display - Continued

3.9.2 Tactical State Display

control of mobility-killed silhouette players is provided through the **COMBAT LOSS** button on the OPFOR Master Menu. When a single target is representing more than one weapon, players will be shown moving side-by-side from target hole to target hole along the defined path of the company to which they belong. When the target receives a hit which is sufficient to combat- or mobility-kill a player, kill designation is assigned to only one of the OPFOR weapons represented by that target. Consequently the silhouette player corresponding to that weapons system will be killed and shrouded on the display. The other silhouette player(s) continue as before, side-by-side along the company's computer generated path.

Target and Tactical States either may be displayed separately or simultaneously. When both states are displayed at the same time, players may be shown as individual players, as an area-occupied, or as unit symbols. *Whether in either or both Target State and Tactical State, the display control of the BLUEFOR remains identical with its display control in engagement simulation segments.*

SECTION 4: CONTROL MEASURES

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SECTION 4: CONTROL MEASURES

This section deals with the construction, deletion, and display of BLUEFOR, OPFOR, and White control measures. A maximum of four hundred (400) control measures can be constructed and displayed on the computer system during each rotation. Two hundred (200) control measures can be constructed in the Real Time mode. These measures, labeled "global," are recorded in the history, and can be displayed at all stations. *Global control measures can only be constructed, changed, and/or deleted in the Real Time mode.* An additional two hundred (200) control measures can be constructed in the Historian mode. These control measures, labeled "local," are not recorded in the history and can only be displayed at the station at which they are entered. *Local control measures can only be constructed, changed, and/or deleted in the Historian mode.*

Control measures are manipulated through the use of a number of control measures buttons on the graphics tablet. For example, the **CONTROL MEASURES** button on the EMC/TAF Interactive Menu portion of the tablet (see Figure 4.1-A, 1) provides the capability to construct and/or delete control measures for BLUEFOR, OPFOR, and White forces. Other control measures buttons include: the "Control Measure" buttons in the upper right-hand portion of Master Menus 1 and 2 (Figure 4.1-A, 2 and 3) which provide the capability to display BLUEFOR and OPFOR control measures and the echelon(s), status (i.e., current or proposed), and tactical categories to which they have been assigned; the **WHITE CONTROL MEASURES** button (Figure 4.1-A, 4) which controls the display of White control measures; and the **CONTROL MEASURE ID** button (Figure 4.1-A, 5) which controls the display of automatically assigned unique control measure IDs.

The following exercises will present examples of the construction, deletion, and display of BLUEFOR, OPFOR, and White control measures. These exercises must be performed with an operational system (i.e., link is "Up") and should be completed in Historian mode. Remember that control measures constructed in Historian mode are not recorded in the history and so will not disrupt pre-rotational preparation or the real time display.

BLUEFOR, OPFOR, and White control measures are all constructed in the same manner. However, there are some slight differences between BLUEFOR, OPFOR, and White menu options. For example, White control measures do not offer a subgroup display option (eg., "Company"). They (i.e., White control measures) are either all "On" or all "Off." BLUEFOR and OPFOR control measures, on the other hand, can be displayed by echelon, status, and/or tactical category. The following exercises and the figures which accompany them are based on the options which are provided with BLUEFOR control measures.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display

Control measures must be constructed before they can be displayed. Each control measure is built through the use of an interactive menu which is activated by performing a pen down on the **CONTROL MEASURES** button in the EMC/TAF Interactive Menu portion of the graphics tablet (Figure 4.1-A, 1).

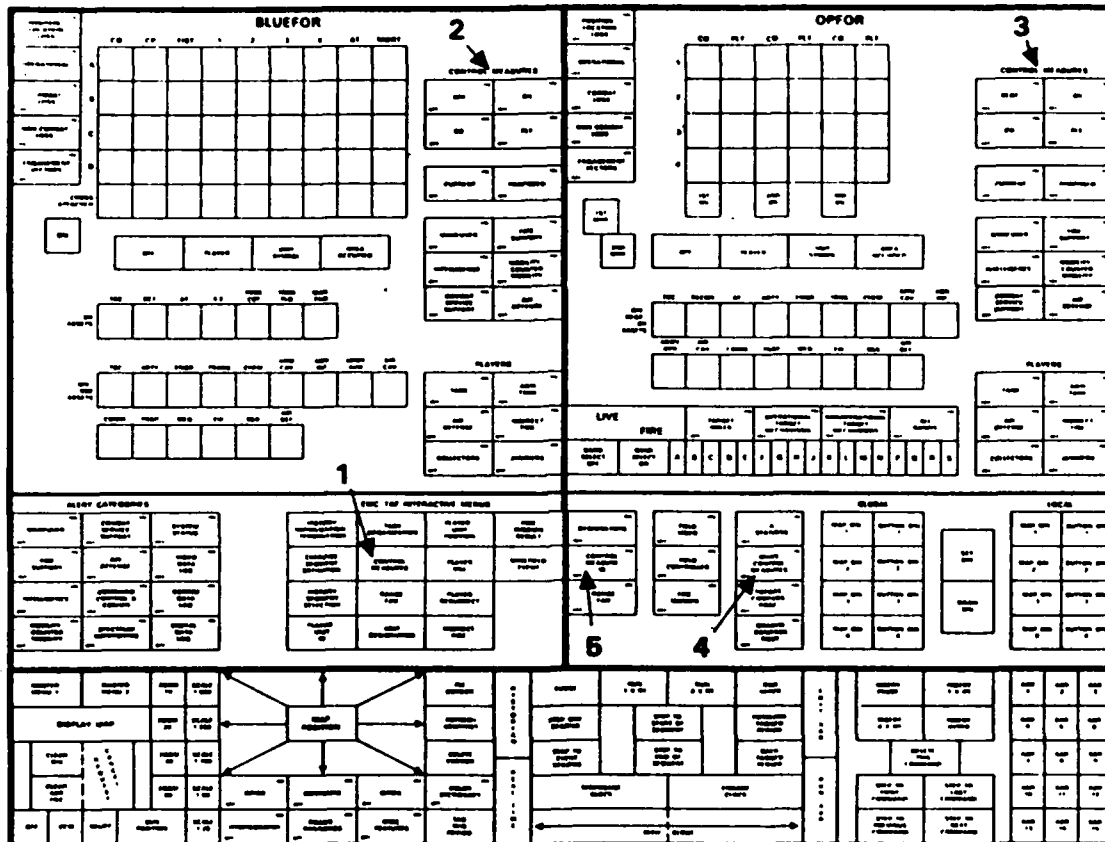


Figure 4.1-A. Control Measure Control Buttons.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display

If you have followed the directions for history segment selection in Section 3 of this manual ("Unit/Player Display Formats," p. 3-1) and successfully activated a history segment during this practice session, you may proceed with this exercise in the Historian mode. If you are presently in Real Time mode, you may either return to Section 3 and follow the directions for history segment selection or ask your supervisor to activate a history segment for this practice session. The session should be completed in Historian mode. Interactive menu options are the same regardless of mode and any procedures learned in the Historian mode will be exactly the same in Real Time mode. Remember that if you complete this practice session in the Historian mode, all control measures constructed or deleted will be "local" control measures (i.e., they will not be recorded in the history, they can only be displayed at the station where they are entered, and they will be assigned UCMIDs between 201 and 400 -- see "Global vs. Local Control Measures, p. 4-18).

Activate the **CONTROL MEASURES** button in the EMC/TAF Interactive Menu section of the tablet. An interactive menu similar to the one you used to select a history segment will appear on the display (see Figure 4.1-B). This menu provides you with the capability to input and/or delete control measures (i.e., points, lines, and areas) on the display.

Displayed on the graphics monitor (see Figure 4.1-B) is the prompt message, "Select Action" (1). In order to construct a control measure, you must activate the **ADD** button (2) by doing a pen down on the tablet in the area that corresponds to the **ADD** button on the display. The prompt message now reads, "Select Force" and the **Add/Delete** box has been replaced with a box that contains force description labels (i.e., **BLUEFOR**, **OPFOR**, and **WHITE**). You will note that your previous selection, **Add**, is now listed in the Control Measures box. Each time you make a selection in the interactive menu mode, it will be added to the list in the Control Measures box.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

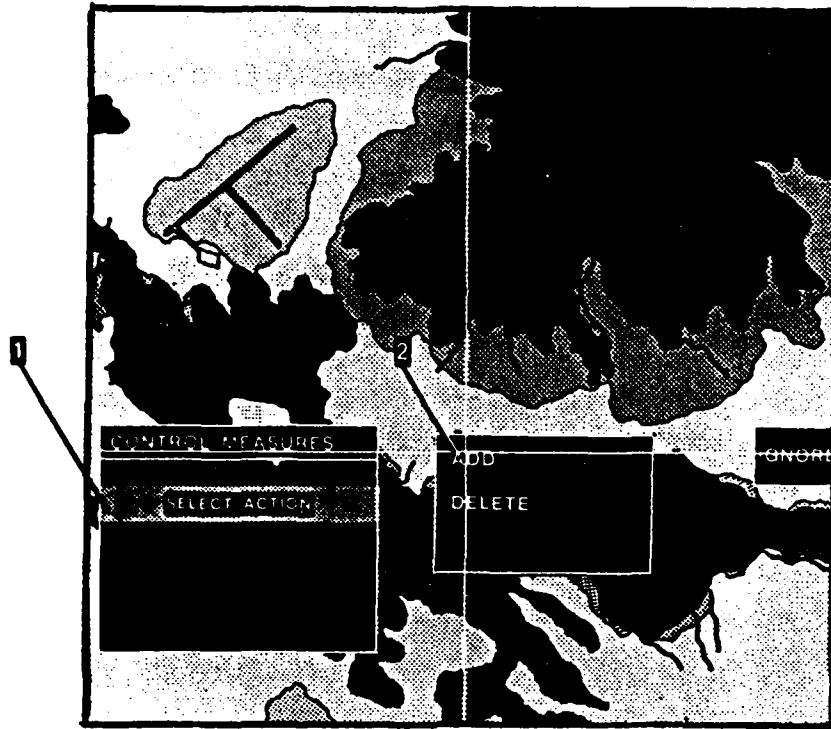


Figure 4.1-B. Control Measures Interactive Menu.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

Select **BLUEFOR** by placing the cursor over your force selection and performing a pen down. The new prompt message will read "Select Tactical Category" (Figure 4.1-C, 1) and the force description labels will be replaced with a list of the six tactical categories (2). If appropriate, you may select more than one tactical category by placing the cursor over each tactical category desired and doing a pen down on each selection (3). After you have selected the desired category(ies), perform a pen down on the **ENTER** (4) button.

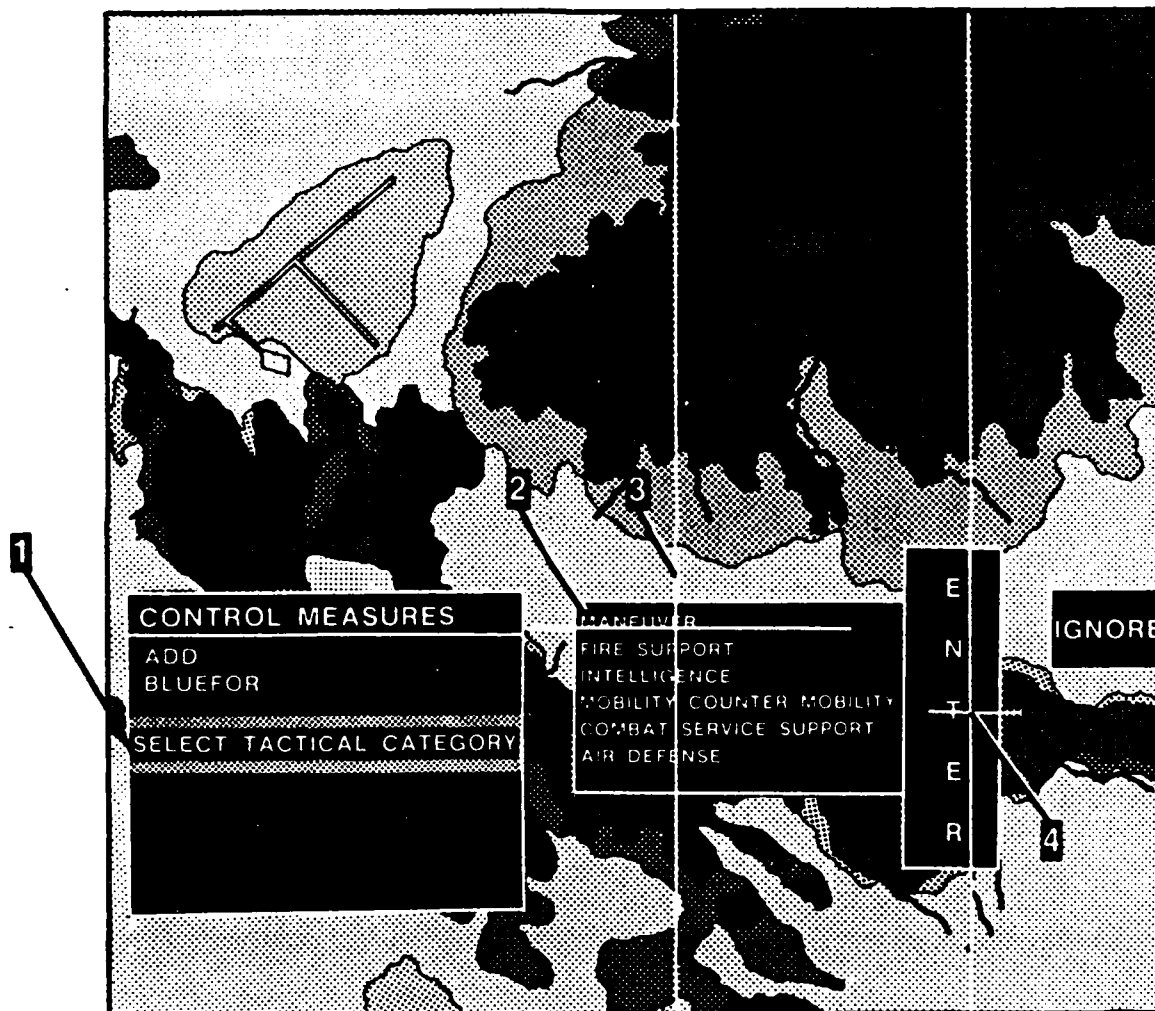


Figure 4.1-C. Select Tactical Category.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

A new prompt, "Select Echelon" and a list of echelon labels will appear on the display. *Only one echelon may be selected.* Select company by performing a pen down over **COMPANY**. The prompt will now read "Select Type" and the echelon label box will contain three new selections: *Point, Line, and Area* (see Figure 4.1-D). *Only one type of control measure may be selected.*

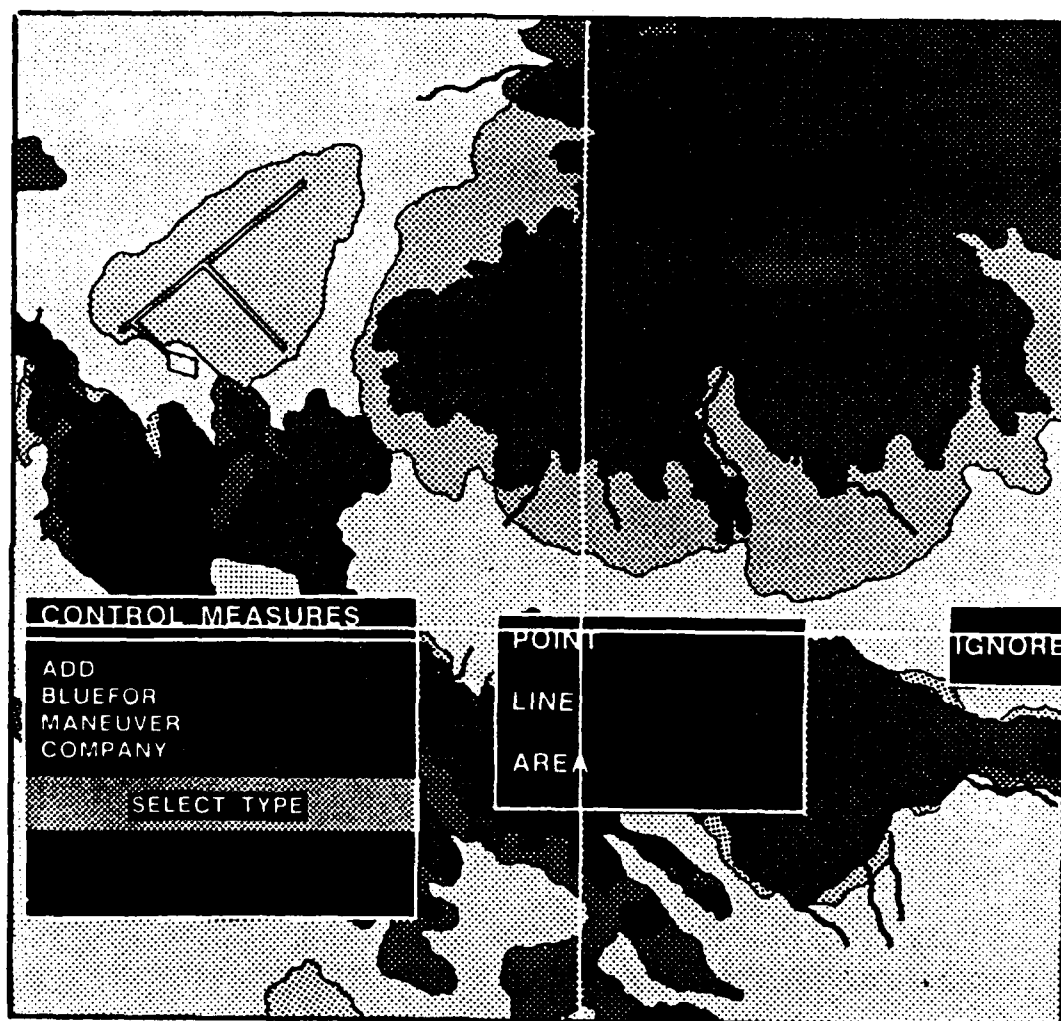


Figure 4.1-D. Select Type of Control Measure.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.1 Constructing a Point

Select **Point** as the type of control measure to be constructed. A new prompt, "Select Control Measure," an **ENTER** box, and a list reflecting the following types of points will appear on the display:

- **Checkpoint**
- **Coordination**
- **Start Point**
- **Release Point**
- **Passage Point**
- **Point of Departure**
- **Remote Sensor Point**
- **Preplanned Target Point**

Only one type of point may be selected. Perform a pen down over **CHECKPOINT** and then enter your selection by performing a pen down in the **ENTER** box.

Displayed on the graphics monitor is a new prompt, "Enter Code Name" (Figure 4.1-E, 1) and an alphanumeric pad for designation of code (2). Select and enter the code name for the point you are constructing by performing a pen down first over the letters and numbers desired to represent the code name and second over the **ENTER** box. (Do not duplicate code names. Each control measure must have a unique identifier.)

Note: This step is optional. All control measures are automatically assigned a unique identifier which is displayed through use of the **CONTROL MEASURE ID** button. Control measures constructed in the **Historian mode** (i.e., local control measures) are assigned a three-digit unique control measure ID (UCMID) between "201" and "400." UCMIDs assigned to global control measures (i.e., those entered in the **Real Time mode** and recorded in the history) are between "001" to "200." If it is not required and you choose not to assign a particular code name to a control measure, you can use the **SKIP** button to move to the next step.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.1 Constructing a Point

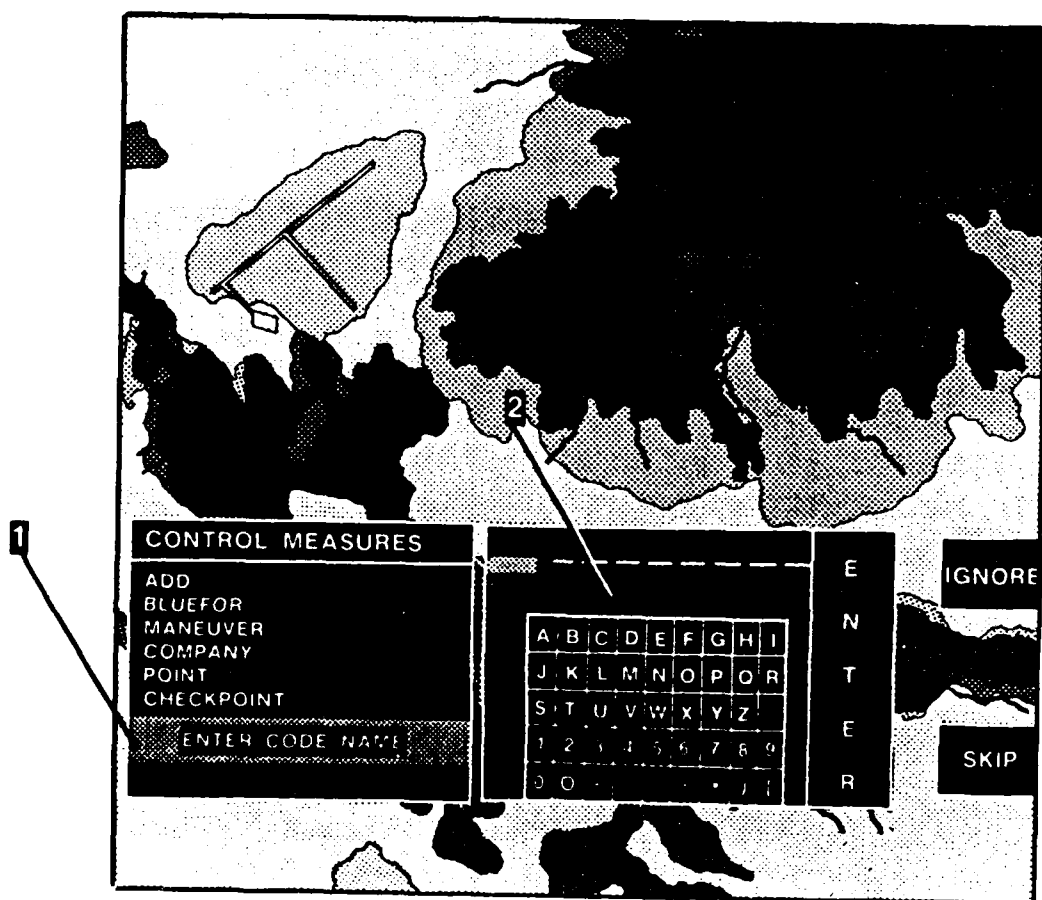


Figure 4-1-1 Enter Code Name.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.1 Constructing a Point

"Please Enter 1 Point" should now be displayed at the top of the display. Place the cursor on the map position that is appropriate for the point selected and perform a pen down. A red dot will appear on the display where the point has been placed.

If, at this point in the selection process, you desired to cancel or change the tactical category, echelon, or location of the point you have just entered, the **IGNORE** button would cancel the selection and cause you to exit the interactive menu.

Note: Ordinarily when a series of control measures are to be constructed for one force type (eg., **BLUEFOR**), the **REPEAT** button would be used to enable construction of the entire series of measures without exiting the menu. However, in order to maintain the integrity of the existing system (i.e., to avoid adding unwanted measures or deleting existing measures during a practice session), you will be instructed to use the **IGNORE** button after defining each control measure.

During actual operation of the DeAnza you will be required to enter more than one control measure for each type of force at a time. If you desired to immediately enter another **BLUEFOR** control measure without cancelling the previous entry, you would use the **REPEAT** button which will return you to the Tactical Category selection buttons where you may begin entering another control measure.

When you have entered all desired control measures or wish to exit the interactive menu and store the control measures you have entered, use the **DONE** button to escape back to the map. To summarize the **IGNORE**, **REPEAT**, and **DONE** buttons: **IGNORE** ignores the selection you have just made and exits the menu; **REPEAT** saves the selection you have just made and returns you to the Tactical Category selection buttons so that another control measure can be added; and **DONE** saves the selection you have just made and exits the menu. Figure 4.1-F shows the different points as they are displayed on the map.

Perform a pen down on the **IGNORE** button and reactivate the interactive menu. Select **ADD**, **BLUEFOR**, **MANEUVER**, **BATTALION**, and **LINE**.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.1 Constructing a Point

POINTS

1. CHECKPOINT



*Number, Letter, or Code Word

2. COORDINATION POINT



(Name)

3. START POINT (SP)



SP(N)

4. RELEASE POINT (RP)



RP(N)

5. PASSAGE POINT (PP)



*Number or Letter

6. POINT OF DEPARTURE (PD)



*Number or Letter

7. REMOTE SENSOR (REMS)



(Designation)

8. PREPLANNED TARGET



(Designation)

Figure 4.1-F. Points.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.2 Constructing a Line

When *Line* is selected as the type of control measure to be entered, a list reflecting the following types of lines will appear on the menu:

- | | |
|---------------------------------|--|
| - <i>Basic Line</i> | - <i>Line of Departure (LD)</i> |
| - <i>Axis of Advance</i> | - <i>LD/LC</i> |
| - <i>Phase Line</i> | - <i>Probable Line of Deployment</i> |
| - <i>Tank Ditch</i> | - <i>Fire Support Coordination Line (FSCL)</i> |
| - <i>Direction of Atk/Route</i> | - <i>Restrictive Fire Line (RFL)</i> |
| - <i>Boundary Line</i> | - <i>Coordinated Fire Line (CFL)</i> |
| - <i>Trace of FEBA</i> | - <i>Main Supply Route (MSR)</i> |
| - <i>FEBA</i> | - <i>Passage Lane</i> |
| - <i>Limit of Advance</i> | - <i>Concertina</i> |

Select a line-type (eg., *CONCERTINA*) and follow the directions in the prompt messages which occur in the "Control Measures" box to select the status of the measure to be built (i.e., current or proposed) and enter a code name.

When the prompt message, "Please Enter 2 to 12 Points," appears at the top of the display, define the particular line you have selected by performing of a series of no less than 2 and no more than 12 pen downs on the map to represent the line in the desired location.

Note: *If the line being created is a Direction of Attack/Route, the last point selected will indicate the direction.*

When you have finished entering the points which form the line, *IGNORE*, *REPEAT*, and *DONE* will be displayed on the menu. Select *IGNORE*. Reactivate the interactive menu and enter an *Axis of Advance* by following the directions in the prompt messages. When you have successfully entered the new line, select *IGNORE* and reactivate the interactive menu. Remember that when a series of control measures are to be constructed for one force type (eg., *BLUEFOR*), the *REPEAT* button would be used to enable construction of the entire series of measures without exiting the menu. However, in order to maintain the integrity of the existing system (i.e., to avoid adding unwanted measures or deleting existing measures), you have been instructed to use the *IGNORE* button after defining each control measure.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.2 Constructing a Line

It should be noted that if you select Boundary, FSCL, RFL, or CFL control measures, in addition to the earlier mentioned prompt messages, a "Select Unit Designation" will appear on the display along with a list of player units previously created in accordance with the force selected. Unit designations are selected by performing a pen down on appropriate player units. *(This input is optional; you can use SKIP to move to the next step.)* An "Enter Date, (DDHHMMZ MMM)" also occurs in connection with the FSCL, RFL, and CFL measures. You must enter the DTG that the line is to become effective. *This step is not optional.*

Figure 4.1-G shows the different types of lines as they are displayed on the map.

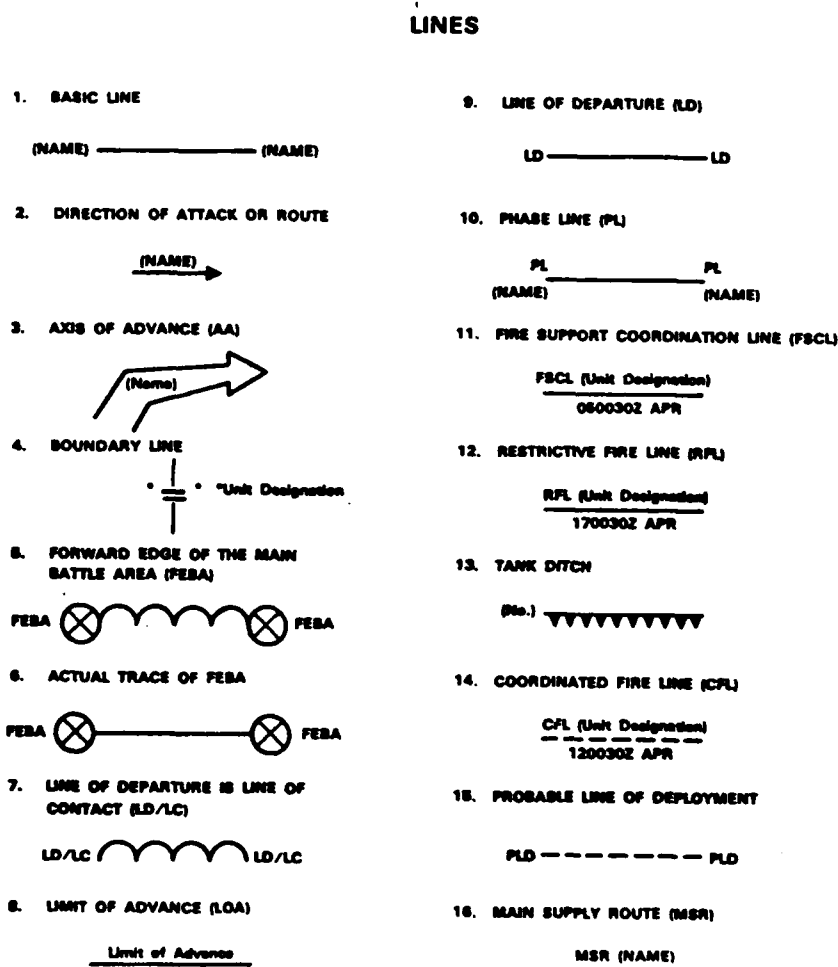


Figure 4.1-G. Lines.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.3 Constructing an Area

When you select **Area** as a control measure, a list reflecting the following types of areas will appear on the display:

- | | |
|----------------------------|--------------------------------------|
| - Basic Area | - Pickup Zone |
| - Area of Operation | - Scatterable Minefield |
| - Assembly Area | - Support Area |
| - Attack Position | - Group of Targets |
| - Drop Zone (DZ) | - Restrictive Fire Area (RFA) |
| - Fire Support Base | - No Fire Area |
| - Landing Zone (LZ) | - Battle Position |
| - FARP | - Minefield |
| - Objective | - Gap/Bridge |
| - Patrol Base | - Contaminated Area |

The number and variety of area-type control measures causes the input of these measures to be somewhat more complex than the point- and line-type control measures. The following exercise will encompass two different area-type control measure inputs in order to demonstrate some of the additional input procedures required with these measures.

If you are not currently in the Control Measures interactive menu, activate the menu and follow the directions in the prompt messages until you have selected **ADD**, **BLUEFOR**, **MANEUVER**, **BATTALION**, and **AREA**. If you are still in the menu, do a pen down on the **IGNORE** button and then reactivate the menu and proceed.

Select **ASSEMBLY AREA** and **PROPOSED** status. You can skip the "Select Unit Designation" prompt by doing a pen down on the **SKIP** button. The prompt, "Please Enter 3 to 12 Points," will appear at the top of the display. Place the cursor over no less than 3 and no more than 12 points on the map to define the appropriate area. The area will enclose itself using the first and last points designated.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.3 Constructing an Area

Select the **IGNORE** button and follow the prompt messages until you have selected **ADD**, **BLUEFOR**, **MOBILITY/COUNTER MOBILITY**, **BATTALION**, **AREA**, and **GAP/BRIDGE**. The prompts, "Define First Side" and "Please Enter 2 to 6 Points" will appear at the top of the display. Enter no less than 2 and no more than 6 points on the map to define the first side of the gap/bridge.

Two new prompts will appear at the top of the display: "Define Second Side" and "Please Enter 2 to 6 Points." Enter 2 to 6 points which define the second side of the gap/bridge and terminate the menu by activating the **IGNORE** button. Figure 4.1-H shows the different types of areas as they appear on the map.

You may continue to practice constructing and deleting control measures until you are familiar with all the different procedures associated with the different types of measures available. Please remember to use the **IGNORE** button at the completion of addition or deletion.

SECTION 4: CONTROL MEASURES

Exercise 4.1: Constructing Control Measures for Display - Continued

4.1.3 Constructing an Area

AREAS

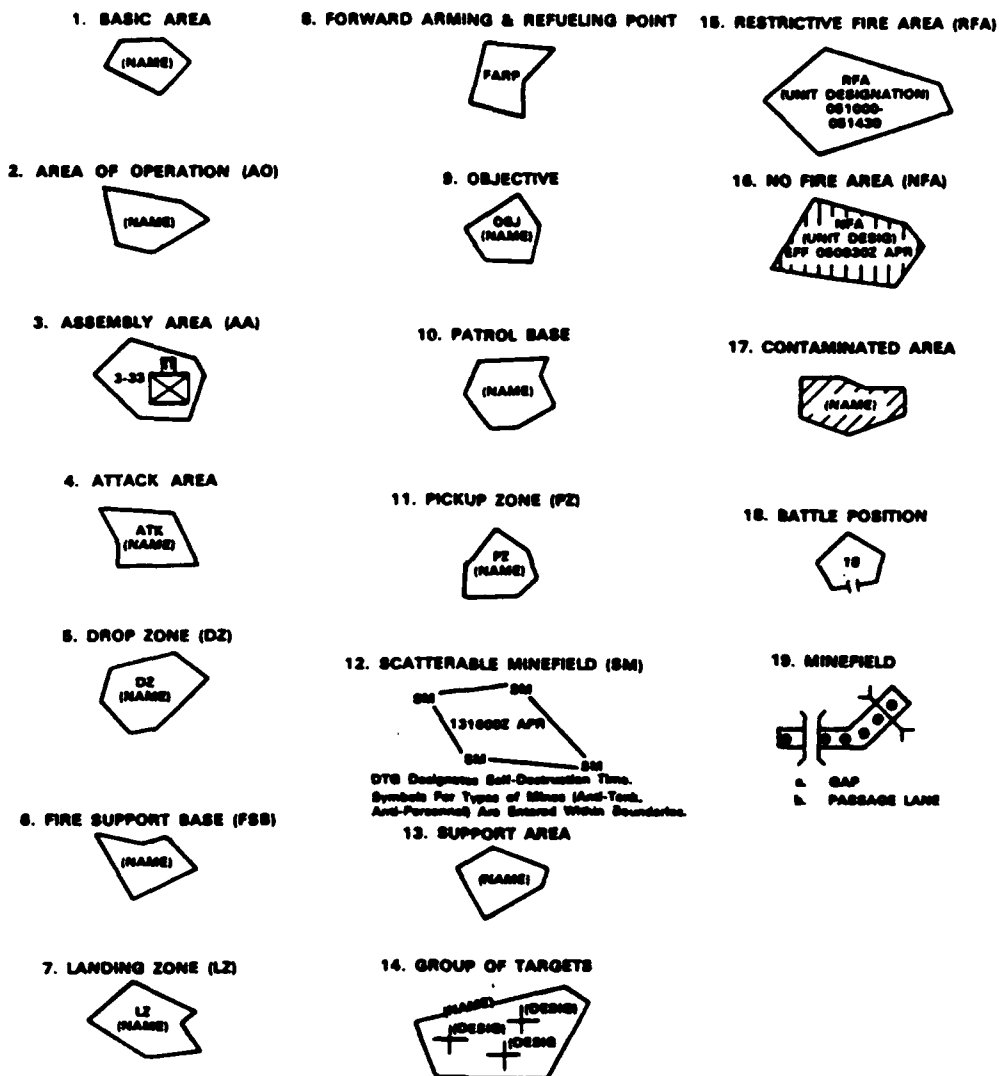


Figure 4.1-H. Areas.

SECTION 4: CONTROL MEASURES

Exercise 4.2: Deleting Control Measures

The procedure for deleting control measures is similar to the control measure construction process. However, the result of the deletion process is the removal of already established control measures from the computer system. Deletion of global control measures (i.e., those control measures constructed in the Real Time mode and displayed at all stations) must be deleted in the Real Time mode. Local control measures (i.e., those control measures constructed in Historian mode and displayed only at the station where they were constructed) must be deleted in Historian mode.

The deletion process requires you to activate the Control Measures interactive menu in the same manner as for the construction process and select the **DELETE** option in the "Select Action" step. It is recommended that you do not actually delete any existing control measures while practicing these procedures. The **IGNORE** button will allow you to perform each of the following actions with no consequence to the control measures that have been entered onto the system during the practice session.

Following the directions in the prompt messages, select the force to which the control measure to be deleted has been assigned. *Unlike the construction process which allows more than one tactical category at a time to be selected, you may select only one tactical category at a time during the deletion process.*

After you have selected the tactical category and echelon assigned to the measure for deletion, the prompt, "Select Item For Deletion," will appear in the Control Measures box and a list of 3-digit UCMIDs will replace the echelon selection box. Select and enter the measure to be deleted by performing a pen down over the appropriate UCMID followed by a pen down in the **ENTER** box. Finally, use the **REPEAT**, **IGNORE**, or **DONE** button to continue the deletion process or to exit the menu.

Exercise 4.3: Displaying Control Measures on the Map

4.3.1 BLUEFOR and OPFOR Control Measures

The display of BLUEFOR and OPFOR control measures is controlled through the use of the "Control Measures" buttons in the upper right-hand corners of Master Menus 1 and 2. Master Menu 1 controls the display of BLUEFOR control measures which are displayed in blue and Master Menu 2 Controls the display of OPFOR control measures which are displayed in red.

SECTION 4: CONTROL MEASURES

Exercise 4.3: Displaying Control Measures on the Map

4.3.1 BLUEFOR and OPFOR Control Measures

The echelon, status, and tactical category of the particular control measures that you wish to display must be activated in order for control measures to appear on the display. For example, in Exercise 4.1 you constructed a control measure which was assigned to the BLUEFOR at company level with proposed status and the tactical category, "Maneuver." In order to display that particular control measure on the map, you must turn on the **COMPANY**, **PROPOSED**, and **MANEUVER** buttons on the BLUEFOR menu. If you wish to show the UCMID assigned to the control measure on the display, you must also turn on the **CONTROL MEASURE ID** button in the lower portion of Master Menu 2. Remember that global control measures will display a UCMID between "001" and "200" and local control measures will show a UCMID between "201" and "400."

4.3.2 White Control Measures

Since White control measures are not assigned to categories as are BLUEFOR and OPFOR measures, only one button is used to control them. The display of White control measures is controlled through use of the **WHITE CONTROL MEASURES** button on the lower portion of Master Menu 2. Names, if assigned, will automatically appear near or within the control measure.

4.3.3 Control Measure Identification

BLUEFOR, OPFOR, and White UCMIDs can be displayed by turning on the **CONTROL MEASURE ID** button. The unique control measure ID (UCMID) mentioned in the above exercises is automatically assigned to every control measure that has been entered into the system during the construction process. The UCMID is assigned to each measure whether or not a code name was assigned during the construction process.

UCMIDs are automatically assigned identifying code numbers according to the mode in which they are entered. For example, you were instructed to practice entering control measures in the Historian rather than the Real Time mode in order to avoid interference with the recording of the rotation in progress. Control measure entry in Historian mode has the result of confining control measures to the particular station at which they were entered (i.e., control measures are "local" rather than "global"). UCMIDs between "201" and "400" are automatically assigned to all local control measures. Global control measures (i.e., those entered in the Real Time mode) are interactive at all stations regardless of where they were entered and are assigned UCMIDs between of "001" and "200."

SECTION 4: CONTROL MEASURES

Exercise 4.3: Displaying Control Measures on the Map

4.3.4 Global vs. Local Control Measures

The previous discussion outlined the procedures for creating, displaying, and deleting both global and local control measures. The following is a brief summary of the differences between global and local control measures. Control measures can be categorized into two types: global and local. Global control measures are constructed and/or deleted in real time and are recorded in the history. Global control measures are assigned UCMIDs in the range of "001" to "200" and they may be constructed, displayed, modified, and/or deleted at all stations. Local control measures are constructed and/or deleted in other than real time (eg., Historian mode) and are not recorded in the history. Local control measures are assigned UCMIDs in the range of "201" to "400" and may only be displayed, modified, or deleted at the station where they were constructed.

It should be noted here that sometimes control measures that are critical to the success or failure of a mission are not entered onto the computer system during the real time preparation of the rotation/mission and, therefore, are not recorded in the history segment and available for use in AAR preparation. When setting up the AAR for broadcast to the field, shortfalls in global (i.e., recorded) control measures can be temporarily overcome by creating the necessary control measure(s) in the Historian mode. Although control measures created in Historian mode are local (i.e., can only be displayed at the station where they were created) and will not be recorded in the history, they can be broadcast to the field and presented in the AAR (see Section 6, Historian and AAR Mode Controls).

SECTION 5: MAP AND BUTTON BINS

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SECTION 5: MAP AND BUTTON BINS

Situational information which is portrayed on the display monitor at each station can be stored and then recalled to the display at a later time through use of the map and button bins. The area on the right half of the lower portion of Master Menu 2 (see Figure 5-A) is used for selection of the bins. Map control settings are stored in the "map bins" and symbology control settings are stored in the "button bins".

There are two types of map and button bins: local and global. Four local map bins (1) and four local button bins (2) are available for each station. Access to local bins is limited to the station itself. On the other hand, the four global map bins (3) and four global button bins (4) are available for all stations to access and manipulate.

Note: *Input and deletion of information in global bins is usually limited to the Exercise Director.*

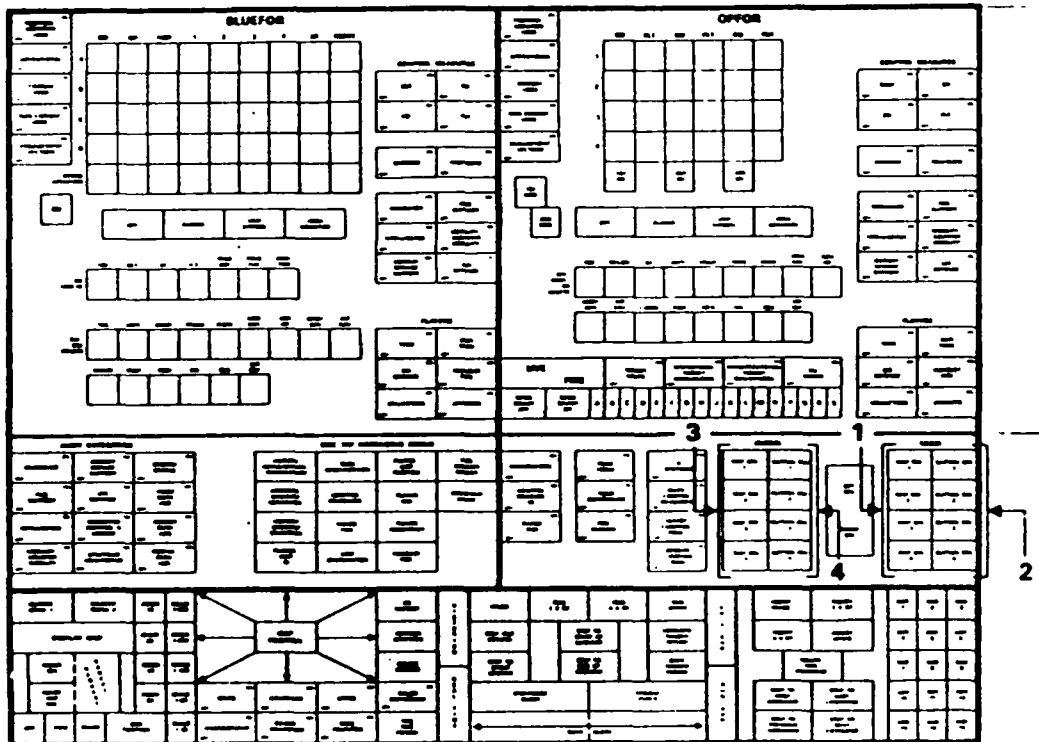


Figure 5-A. Map and Button Bins.

SECTION 5: MAP AND BUTTON BINS

Map bins are utilized to store the map settings which are displayed on the screen including:

- o Selected Background (CCM, RELIEF, or OFF)
- o Infrastructure Attributes
 - Grids
 - Hydrography
 - Contours
 - Roads/Railroads
 - Cities
 - Misc. Features
- o Left-Hand Margin Display including:
 - Scale
 - Zoom
 - Map Center Coordinates
- o Right-Hand Margin Display including:
 - Statistics
 - Color Dictionary

Button bins are used to store player, unit, and control measure symbology. All symbology selections that can be made using Master Menu 1 -- except those headed "EMC/TAF Interactive Menus" -- may be stored in a vacant button bin. Master Menu 2 settings that may be stored include all symbology selections. Historian and AAR control functions are not included in the selections that may be stored in button bins.

SECTION 3: MAP AND BUTTON BINS

In order not to interfere with the information storage process that takes place on the system while a rotation is in progress, the following instruction is presented as a discussion of the different bin functions rather than as a series of exercises. If you are being supervised during this period of the instruction, check with your supervisor about the possibility of actually storing, displaying, and deleting different map and symbology settings using the bin control buttons. If you are learning the DeAnza for the first time and are not being supervised during this instruction, do not attempt to utilize the bin function buttons.

5.1: Storing Information

The **SET BIN** button provides the capability to store specific map or symbology control settings in either a map or a button bin.

5.1.1 Map Bins

If you desire to store specific map settings that appear on the display, you first must execute a pen down on the **SET BIN** button. This results in the appearance of the prompt, "Select Bin to Set," in the left margin of the display. After this prompt appears, you can select a map bin for storage by doing a pen down on one of the four local or four global **MAP BIN** buttons.

Note: *Input and deletion of information in global bins is usually limited to the Exercise Director.*

Information can only be stored in vacant bins. There is no function on the system that will tell you if a bin is vacant before you try to store the information. If the bin you have selected is vacant, the "Select Bin To Set" prompt will disappear from the left margin display. The disappearance of this prompt is your cue that the information has, in fact, been stored in the selected bin.

SECTION 3: MAP AND BUTTON BINS

5.1: Storing Information - Continued

5.1.1 Map Bins

If the bin you select is occupied, the prompt, "Select Bin To Set," will remain on the left margin display. As long as this prompt appears in the left margin, other bin functions will be disabled. You must either select a vacant bin for storage, cancel your request to set a bin by performing a pen down on the **CANCEL REQUEST** button beneath the **DISPLAY MAP** button in the lower left portion of the tablet, or clear one of the occupied bins (see Exercise 5.3, p. 5-5) so that the map settings you desire to store can be placed in a vacant bin.

5.1.2 Button Bins

Button bins are activated and used in the same manner as map bins. In order to store a specific set of symbology settings which appear on the display, you must activate the **SET BIN** button and then perform a pen down on one of the four local or four global **BUTTON BIN** buttons. As with the map bins, the "Select Bin to Set" prompt is your only cue as to the status of the bin you have selected (i.e., vacant or occupied). If the bin you select is occupied, you must exercise one of the following options before you can continue: 1) select another bin, 2) cancel your request, or 3) clear an occupied bin and store the desired setting.

Note: Input and deletion of information in global bins is usually limited to the Exercise Director.

5.2: Recalling Information to the Display

Once a bin has been set, the settings that have been stored can be recalled to the display by performing a pen down on the **DRAW BIN** button. Activation of the **DRAW BIN** button results in the left margin prompt, "Select Bin To Draw." You can select from either the global or local map or button bins by performing a pen down on the appropriate box on the graphics tablet.

If the selected bin is occupied (i.e., information has been stored in the bin), the prompt will disappear and a display will be generated based upon the control settings stored in the bin that was selected. If the selected bin is vacant, (i.e., no information has been stored in the bin), the prompt, "Select Bin To Draw," will remain in the left margin. You must either select another bin to draw or cancel the request.

SECTION 5: MAP AND BUTTON BINS

5.3: Clearing the Bins

If you desire to store map or button settings in an already occupied bin, it is necessary to first clear that bin of the information stored there. The **CLEAR BIN** button in the lower left-hand portion of the graphics tablet can be used to clear any local or global map or button bin. When you execute a pen down on the **CLEAR BIN** button, the prompt, "Select Bin To Clear," will appear in the left margin. You may then select the bin that you desire to clear by performing a pen down over the appropriate box.

If the selected bin is occupied, the disappearance of the prompt, "Select Bin To Clear," in the left margin will cue you that the bin has been cleared. If the selected bin is in a vacant state, the prompt will remain on the display. When the prompt, "Select Bin To Clear," appears in the left margin, only the selection of an occupied bin or a pen down on the **CANCEL REQUEST** button can be accomplished. If you cannot find an occupied bin to clear, you must cancel your request.

5.4: Cancel Request

This paragraph summarizes the use of the **CANCEL REQUEST** button. When any one of the **SET BIN**, **DBAW BIN**, or **CLEAR BIN** buttons is selected, the prompt, "Select Bin To Set" ("Draw" or "Clear"), is displayed in the left margin. When any one of these prompts is on the display, a vacant or occupied bin -- as appropriate -- must be selected or all controls other than Cancel Request become disabled. If you do not desire to select a bin under the requested action of setting, drawing, or clearing, the **CANCEL REQUEST** button must be used to reactivate the other control functions. A pen down on the **CANCEL REQUEST** button will cause the action prompt in the left margin to disappear.

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

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SECTION 6: HISTORIAN AND AAR MODE CONTROLS

The DeAnza provides the capability to manipulate the tactical display in several different modes. For example, when you operate in the Real Time mode, the tactical display at your station reflects the current or "real time" state of the exercise that is in progress in the field. You will be performing many of the procedures discussed in this manual while operating in the Real Time mode. Historian mode operates in the past -- i.e., displays events that have been previously recorded. The activation of Historian mode causes the real time graphics display and associated statistics to freeze. Events which continue to occur in real time while you use the Historian mode will be recorded in the data base even though you do not see them occur. The Edit AAR and Run AAR modes provide the capability to store, organize, and replay specific occurrences and events which enable the preparation of information for presentation in the AAR.

The purpose of the following discussion is to explain the numerous controls and capabilities that are provided in the various display modes (eg., Real Time, Historian, Run / Edit AAR).

Exercise 6.1: Historian Mode

Historian controls provide the capability to access past time periods and manipulate the display of a "recalled" history segment. Access to history segments is provided through use of the **HISTORY SEGMENT SELECTION** button on the EMC/TAF Interactive Menu portion of the graphics tablet. Manipulation of the recalled segment is provided through use of the Historian Control buttons in the lower portion of Master Menu 2. Historian Control buttons provide you with the means to:

- Step to the beginning (or start time) of an exercise segment
- Step to the end of an exercise segment
- Step forward to the beginning of the next "tagged" period in the segment
- Step back to the beginning of the preceeding "tagged" period
- Step forward one second
- Step forward to the next second in which an event occurred
- Slew forward or backward to a desired time

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.1: Historian Mode - Continued

Historian control buttons also provide the means to replay the selected history segment at several different time rates:

- one times real time (**RUN 1XRT**),
- four times real time (**RUN 4XRT**), and
- as fast as the computer can replay events (**RUN HYPER**).

You also have the capability to interrupt the selected rate of replay at any time by selecting either the **PAUSE** button or any of the other review rate buttons (i.e., **RUN 1XRT** or **RUN 4XRT**).

6.1.1 History Segment Selection

When operating in the Real Time mode, a pen down on the **HISTORIAN** button (next to the **FIX CURSOR** button in the lower portion of the graphics tablet) will immediately cause real time to freeze. Once real time has been paused and Historian mode selected, you must activate the EMC/TAF Interactive Menu by performing a pen down on the **HISTORY SEGMENT SELECTION** button. An interactive menu will appear on the display with prompts that will assist you in the selection of an exercise segment for replay. The following directions for selecting a history segment for replay were given previously in Exercise 3.0, "History Segment Selection", p. 3-1. If you are already familiar with the history segment selection process, skip this practice exercise and proceed to the next practice exercise, 6.1.2, "Operator Controls." p. 6-6.

Follow the directions that accompany the interactive menu on the display. Selections on the interactive menus are made by performing a pen down on the area of the graphics tablet that corresponds with the interactive menu function that appears on the display. For example, if you activate the **HISTORY SEGMENT SELECTION** button while Master Menu 1 is on the display, the CCM map and the cursor will both appear on the display with an interactive menu superimposed over the map (see Figure 6.1-A).

The "Select History Segment" box (1) in the lower left hand corner of the new display (Figure 6.1-A) contains the prompt message, "Select History," in the area which is highlighted in red (2). The smaller box in the center of the display (3) contains the history segments that are available for replay. You select a history segment by moving the cursor to that portion of the tablet that corresponds to the segment label on the display that you wish to select and performing a pen down.

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.1: Historian Mode - Continued

6.1.1 History Segment Selection

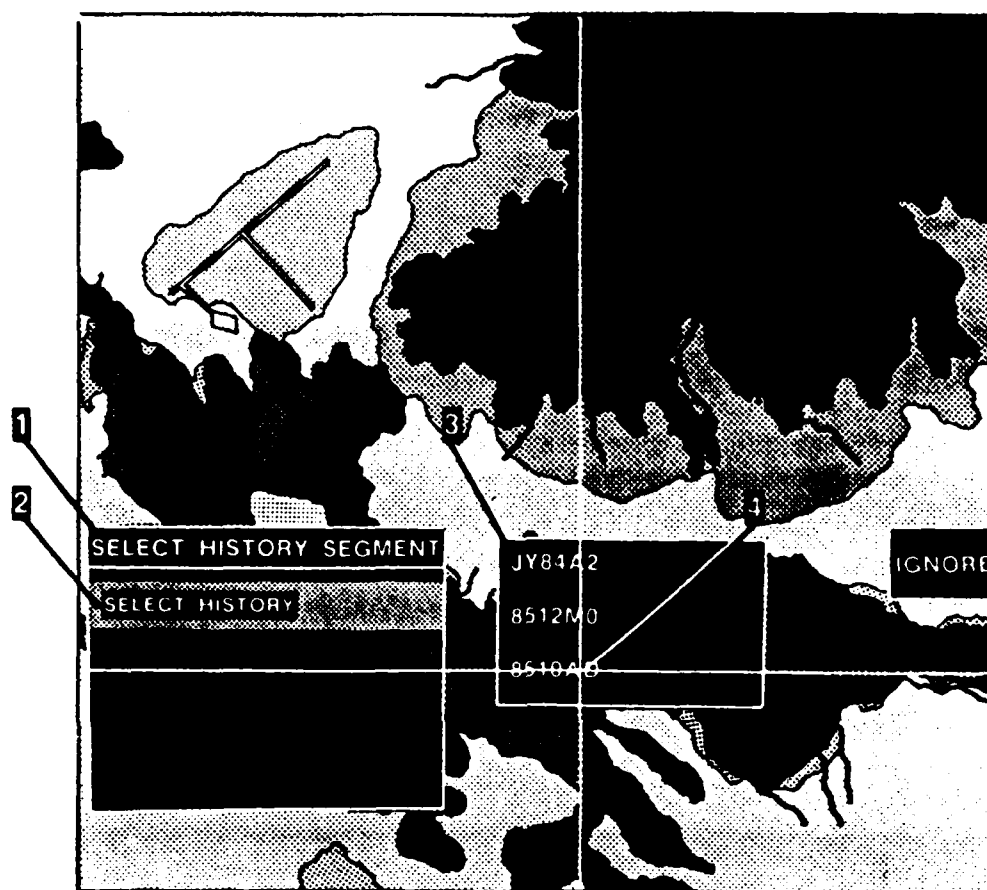


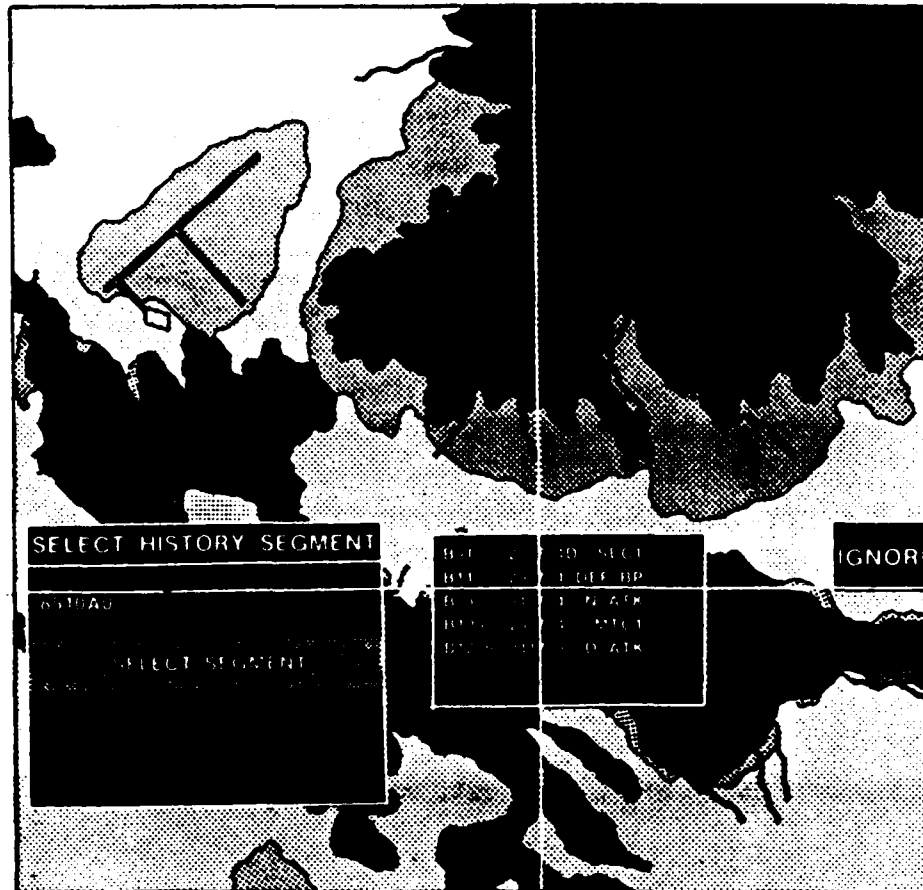
Figure 6.1-A. History Segment Selection.

Once you have selected a history segment, the box containing the segment labels will disappear and be replaced with a similar box containing exercise labels (Figure 6.1-B). A new prompt message, "Select Segment," will appear in the "Select History Segment" box in the lower left corner of the display.

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.1: Historian Mode - Continued

6.1.1 History Segment Selection



SECTION 8: HISTORIAN AND AAR MODE CONTROLS

Exercise 8.1: Historian Mode - Continued

8.1.1 History Segment Selection

You follow the same procedure in the selection of an exercise segment that you used to select the history segment. When you have selected an exercise, the box containing the exercise labels will disappear from the display and a small box that says "Done" will appear in the lower right-hand corner of the display (Figure 6.1-C (1)). The "History Segment Selection" box (Figure 6.1-C (2)) will now display your history segment and exercise selections along with the prompt message "Terminate Menu" (3, 4, and 5). You terminate the menu by performing a pen down on the **DONE** option. The **IGNORE** option (6) which is present throughout menu use, allows you to ignore a selection and leave the menu at any time.



Figure 6.1-C. Terminate Menu.

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.1: Historian Mode - Continued

6.1.2 Operator Controls

Once you have selected a history segment, the following Operator Controls provide the capability to randomly access different time periods in the exercise that are of interest.

STEP TO START OF SEGMENT (Figure 6.1- D, (1)). A pen down on this button will bring you to the time of the beginning of the selected segment and remain paused at that time.

STEP TO END OF SEGMENT (Figure 6.1- D, (2)). A pen down on this button will bring you to the time of the end of the segment and remain paused at that time.

FORWARD TAGGED PERIOD/BACK TAGGED PERIOD. Tagging is an event which can only take place in real time. When you note an event which you feel is significant taking place on the display in the Real Time mode, you can "tag" the event. Tagging flags the five-minute period during which the event occurred. You must maintain a record of the specific event, the time of the event, and the graphics and symbology that were displayed when the event occurred.

BACK TAGGED PERIOD (Figure 6.1- D, (3)). This button causes a stepping back in time sequentially to each tagged period in the segment. Tagging is a global phenomenon and you will not only step back to the periods tagged at your station but to every period tagged by all other stations during that particular segment.

FORWARD TAGGED PERIOD (Figure 6.1- D, (4)). This button works in reverse of the **BACK TAGGED PERIOD** button.

STEP ONE SECOND (Figure 6.1- D, (5)). If you are not paused at the end of a segment, each pen down on this button will advance you forward in time one second. Holding the pen down will advance time continuously in one-second increments. This capability is useful if there is a precise time in a history segment that you want to get to in order to review certain data.

STEP TO EVENT SECOND (Figure 6.1- D, (6)). This button allows historical access to sequential seconds in which an event(s) occurred. An event is defined as a firing or pairing by any instrumented player.

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.1: Historian Mode - Continued

6.1.2 Operator Controls

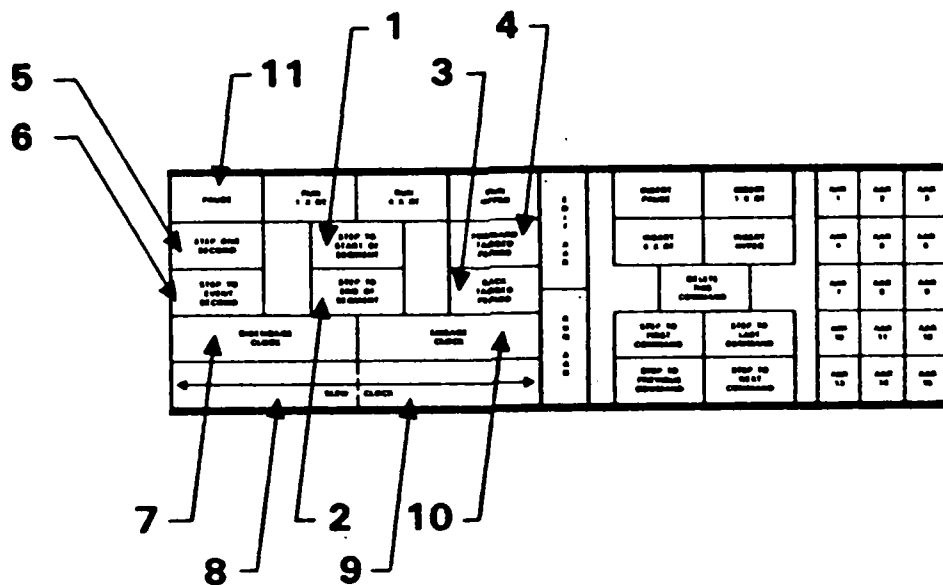


Figure 6.1-D. Historian Controls.

DISENGAGE CLOCK / ENGAGE CLOCK / SLEW CLOCK. These buttons are used interactively to smoothly slew forward or backwards in time. (These buttons may be used in Real Time mode as well as Historian mode. In Real Time mode, you cannot advance in time beyond the present real time.)

To move forward or backward in time with these controls, first select the **DISENGAGE CLOCK** button (Figure 6.1- D, (7)). This will freeze all graphics and data at the point where the clock was disengaged. Next do a pen down on the desired **SLEW CLOCK** arrow (Figure 6.1- D, (8 and 9)). The arrow which points to your left slews the clock backward in time. The arrow which points to your right slews the clock forward. The further to the left on the left arrow or to the right on the right arrow you place the

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.1: Historian Mode - Continued

6.1.2 Operator Controls

pen. the faster the clock will run. The clock will run for as long as the pen remains on the arrow. Removing the pen from the tablet will stop the clock. When you have reached the desired point in time, perform a pen down on the **ENGAGE CLOCK** button (Figure 6.1- D, (10)) to bring the graphics and data into sync with the time you have selected through the slew process.

Once you have arrived at the desired point in time, you can use the **RUN 1XRT**, **RUN 4XRT**, and **RUN HYPER** buttons to move forward in time at the desired rate.

PAUSE (Figure 6.1- D, (11)). Performing a pen down on this button causes time, graphic display, and statistics to freeze on both tactical (DeAnza) and support (VT105) displays.

Exercise 6.2: Edit / Run AAR

All data which can be recorded in a history segment also may be edited and stored in AAR files. When these stored tactical displays are supported by statistical tables, graphs, communications logs, and television recordings they become the prime mover for training feedback in the After Action Review.

While it is possible to gather information for the AAR by manually accessing and replaying all data in the Historian mode, constructing AAR files in the Edit AAR mode greatly facilitates the construction of the AAR for subsequent replay in the Run AAR mode.

The need to maintain the integrity of existing files that may have been stored during the rotation in which you are learning to operate your station has already been discussed in Sections 3 and 4. In order to avoid the inclusion of unwanted information or the deletion of critical information during a practice session, the following instruction is presented in the form of a discussion rather than as a series of exercises to be performed. If you are being supervised during this instruction, you can check with your supervisor about the possibility of actually editing or running existing AAR files. *If you are learning the DeAnza for the first time and are not being supervised during this instruction, you should not perform any of the actions discussed below.*

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.2: Edit / Run AAR Mode - Continued

Operator logs of events and descriptions of recorded information must be reviewed and screened carefully for significance and sequencing before final selection of the information that will be stored in the AAR files. The result of this screening process is the "storyboard" or structuring guide for editing the recorded information into AAR files.

There are fifteen AAR files partitioned to each history. Each AAR file (bin) is allocated for the storage of specific types of information. For example, certain files are designated for the different mechanized infantry and armor teams and others for the seven operating systems. *Check with your Exercise Director for the specific AAR file numbers allocated for the storage of different types of information.*

Each entry into an AAR file contains the following information:

- The AAR Command (eg., Pause, Run 1XRT, Run 4XRT, Run Hyper)
- Time
- BLUEFOR Master Menu Button Positions
- OPFOR Master Menu Button Positions
- Map Center Position and Display Data

You enter the "Edit AAR" mode by performing a pen down on the **EDIT AAR** button located on the lower portion of the tablet below Master Menu 2. The prompt, "Select File," will appear in the lower left margin of the display along with the new mode designation, "Edit AAR." As long as the "Select File" prompt remains in the left margin, you must either select an AAR file for editing or cancel your request by performing a pen down on the **CANCEL REQUEST** button -- all other functions are disabled.

When a file is being edited or run at any station, it is "locked" (i.e., unavailable) to all other stations. Any file that is not "locked" may be selected for editing. In the event that the file you select for editing is being run or edited at another station, the "Select File" prompt will remain in the left margin thus cueing you that the file you have selected is unavailable (i.e., locked).

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.2: Edit / Run AAR Mode - Continued

The "AAR Command" entry captures the picture displayed on the DeAnza at the time of entry and causes the computer to execute the command. For example, a "Run" command -- eg., **RUN 4XRT** -- will cause the display to replay in 4 times real time until the time specified in the next command. *The use of the "Run" feature requires you to insert a "Pause" command following the "Run" command in order to define the end of the run sequence. The time associated with the "Pause" command will define the end of the run sequence.*

Flagging significant events. When monitoring the tactical action in either Real Time or Historian mode, a significant event may be "*flagged*" for storage in an AAR file by performing the following actions:

- 1) Perform a pen down on **EDIT AAR**
The display on the DeAnza will not change when the EDIT AAR button is activated.
- 2) Perform a pen down on appropriate **AAR #**
- 3) Perform a pen down on **INSERT PAUSE**.
- 4) Record the time, type of command, and significance of action in the AAR event log for future reference.
- 5) Perform a pen down on **REAL TIME** or **HIST-ORIAN** as appropriate for return to real time display or replay of history segment.

The result of this procedure will be a series of "Pause" commands in the AAR file which have been recorded in the event log and designate significant events for inclusion in the AAR (see Table 6.1).

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.2: Edit / Run AAR Mode - Continued

Table 6.1

Pause Commands and Associated AAR Event Log

Pause Commands

Command:	01	02	03	04	05	06	07	08
Time:	0620	0622	0630	0631	0640	0650	0701	0712

AAR Event Log

Time	Command #	Command	Description
0620	01	Pause	Initial disposition of forces
0622	02	Pause	First movement
0630	03	Pause	Crossing LD
0631	04	Pause	First contact
0640	05	Pause	C22 kill BMP
0650	06	Pause	C24 killed by T-72
0701	07	Pause	C21 fratricide
0712	08	Pause	Disposition of forces at end of mission

Review and Edit the AAR file. The edit and review processes described below are used to develop the presentation of the AAR which will be given to the unit(s) under training. This process consists of the review and organization of significant events which have been flagged and stored in AAR files (i.e., the "Pauses" described in the previous procedure have been inserted into appropriate AAR files and recorded in the event log).

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.2: Edit / Run AAR Mode - Continued

Review. The first step in the editing process consists of a review of the "Pauses" which have been inserted into the AAR files.

- 1) Perform a pen down on the **EDIT AAR** button
- 2) Perform a pen down on the appropriate **AAR file #**.
- 3) Perform a pen down on the **STEP TO FIRST COMMAND**.

These steps bring you to the beginning of the AAR file.

- 4) Perform a pen down on the **RUN AAR** button

The display would now show the map and button settings as recorded at the first "Pause" command at 0620 (see Table 6.1). The tactical display and associated data will remain frozen at this point until you execute another pen down on the **RUN AAR** button.

- 5) Perform a pen down on the **RUN AAR** button.

The display now shows the tactical display and associated data as recorded at the second "Pause" command at 0622 (see Table 6.1). You may review the entire AAR file by executing a pen down on the **RUN AAR** button until you have reviewed all "Pause" commands and reached the end of the file.

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.2: Edit / Run AAR Mode - Continued

Editing. Once the AAR files have been reviewed, the information contained in the "Pause" commands must be organized (edited) into a format which meets the needs of the After Action Review that will be given to the unit in the field. For example, if you wished to present the unit movement crossing the LD as a part of the AAR, this could be edited into the AAR file as follows:

- 1) Perform a pen down on the **EDIT AAR** button.
- 2) Perform a pen down on the appropriate **AAR file #**.
- 3) Perform a pen down on the **STEP TO FIRST COMMAND** button (AAR##:01: initial disposition of forces at 0620).
- 4) Perform a pen down on the **STEP TO NEXT COMMAND** button (AAR##:02: first movement at 0622).
- 5) Perform a pen down on the **RUN AAR** button. (This causes the display to cycle to the map and button settings as recorded at 0622).
- 6) Perform a pen down on the **EDIT AAR** button.
- 7) Perform a pen down on the **INSERT HYPER** button.

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.2: Edit / Run AAR Mode - Continued

This will cause the the display to "run hyper" (i.e., as fast as the computer can run the display) beginning with the command after the pause at 0622 and continuing until the time of the next command (AAR##:03 at 0630). If this is too long or too short a time, you can insert a command to specify the desired length of time by performing the following:

- 8) Perform a pen down on the **ENGAGE CLOCK** button.
- 9) Perform a pen down on the **SLEW CLOCK** button
- 10) Set the clock to the desired stop time.
- 11) Perform a pen down on the **ENGAGE CLOCK** button.
- 12) Perform a pen down on the **INSERT PAUSE** button.

This sets the stop time for the "Run Hyper" section of the AAR presentation of the AAR presentation. Suppose, for example, that you desired the run hyper section of the AAR to run from 0622 until 0635. You would set the stop time on the clock to 0635 (Steps 8 through 12 above). The commands in the AAR file would now appear as follows:

Pause Commands

Command:	01	02	03	04	05	06
Time:	0620	0622	0622	0635	0635	0631

You will note that the command numbers have shifted to accommodate the insertion of the "Run Hyper" and time control commands at 0622 and 0635. You have not lost any of the previous command entries, however, the insertion of new commands has caused the previous command numbers and their associated times to change (eg., command 06 at 0631 was previously command 04 -- see Table 6.1, p. 6-11).

SECTION 6: HISTORIAN AND AAR MODE CONTROLS

Exercise 6.2: Edit / Run AAR Mode - Continued

You develop the AAR by using the "storyboard" as a guide for editing the pauses that were originally inserted into AAR files during the real time monitoring of the exercise. Using the **EDIT** and **RUN AAR** functions, you will be inserting the pause and run commands which best display the mission-outcome-determining events that occurred in the field. The editing process should result in an AAR file in which events occur chronologically and show all actions critical to the success or failure of the mission. *It should be noted here that sometimes control measures that are critical to the success or failure of a mission are not entered onto the computer system during the realtime preparation of the rotation/mission and, therefore, are not recorded in the history segment and available for the AAR.* When setting up the AAR for broadcast to the field, shortfalls in global (i.e., recorded) control measures can be temporarily overcome by creating the necessary control measure(s) in the Historian mode. Although control measures created in Historian mode are local (i.e., can only be displayed at the station where they were created) and will not be recorded in the history, they can be broadcast to the field and presented in the AAR.

Once you have completed editing the AAR file, you should review the final file by using the **RUN AAR** button to check the order and logic of the finished file.

CONCLUSION

When you have completed all six sections of this manual, you should have a basic understanding of most of the display functions available on the DeAnza. This manual is not intended as a complete reference to the DeAnza graphics display. The EMC/IAF Operating Manual, commonly called "*The Redbook*," contains instructional materials which cover those functions not addressed in this text. Many additional skills that you will require will be learned during the actual operation of your station.

The Index which follows is an alphabetical listing of all function buttons on the DeAnza graphics tablet that are addressed in this text. Each function button listing shows a reference to the page(s) where the instruction for that button occurs.

APPENDIX A

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